A HISTORY OF THE NATIVE PEOPLE OF CANADA

VOLUME III
PART 1

(A.D. 500 – European Contact)

J. V. WRIGHT

A HISTORY OF THE NATIVE PEOPLE OF CANADA

VOLUME III (A.D. 500 - European Contact)

PART 1: Maritime Algonquian, St. Lawrence Iroquois,
Ontario Iroquois, Glen Meyer/Western Basin,
and Northern Algonquian Cultures

by

J. V. WRIGHT

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Front cover photograph
This early seventeenth-century stone pipe fragment of a human wearing a bear headdress represents an exceptional example of the skill of the Huron artisan

Back cover photograph
A wooden human figure from a Beothuk grave on the Island of Newfoundland; generally referred to as a doll, it may also be an ancestor figure.

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DEDICATED TO THE MEMORY OF THE ANCESTORS

OF THE NATIVE PEOPLE

PREFACE

The central purpose of this volume and its sister volumes is to provide a wide readership with information on the history of the native people prior to the dislocating incursions of Europeans into the territory now known as Canada. Unlike the previous two volumes, however, the much increased body of archaeological information and the advent of documentary records for the period A.D. 500 to European contact has necessitated splitting the Volume into two separate books albeit while retaining a single volume designation. This Volume is Part 1 and considers the following five cultures: Maritime Algonquian; St.Lawrence Iroquois; Ontario Iroquois; Glen Meyer/Western Basin; and Northern Algonquian. Volume III, Part 2 will proceed westward and northward with descriptions of the remaining cultures: Plains; Plateau; West Coast; Northern Athabascan; Late Palaeo-Eskimo; and Inuit. Just as the agricultural revolution in the Lower Great Lakes and Upper St.Lawrence River took up most of the space in Part 1 it is anticipated that the events surrounding the 10th century Inuit migration out of Alaska to occupy northern Canada and Greenland and the concomitant fate of the indigenous Late Palaeo-Eskimos, the Dorset, will dominate the space in Part 2.

Undoubtedly the most dramatic event considered in Part1 of Volume III is the Agricultural Revolution which began in the Lower Great Lakes region about AD 500 and then spread to the Upper St.Lawrence River and adjacent regions. The economies of former hunters and gatherers were transformed into a horticultural one based upon corn (maize), beans, squash, and other cultigens like sunflower and tobacco. The reliance upon domesticated plants resulted in a massive social revolution whereby women became the major food producers and, thus, largely replaced men in that role. Settlement changed from transitory seasonal campsites to permanent villages as large as 5 hectares (12.4 acres) in extent and housing thousands of people who lived in communal longhouses. Virtually every aspect of culture was transformed. Like documentary history, however, archaeological history has its limitations and this is perhaps best expressed in Chapter 34 where there is a current debate whether the Glen Meyer/Western Basin culture constituted a single culture or two related cultures and whether they were ethnically Iroquoian or Algonquian. Exclusive of the St.Lawrence Iroquois, the Ontario Iroquois, historically documented as the Huron, Neutral, and Tionnontaté (Petun) and Erie, and the equivocal Glen Meyer/Western Basin cultural construct, the remaining cultures in Volume III, Part 1 essentially continued to elaborate upon the cultural practices of earlier times as described in Volume II.

Volume III, Part 1 represents a continuation of Volume II relative to pagination, illustrations, and table numbers. Thus the Volume begins with page 1185, Map VI, Table 23, Colour Plate XX, Figure 108, etc. And, to quote from the Preface of Volume

II, "Certain qualifications relative to all three volumes, regarding such matters as the reasons for writing them in the first place, how radiocarbon years were translated into calendar years, theoretical orientation, and a host of other considerations were provided in the Preface and, in particular, the Introduction to Volume I (Wright 1995) and will not be repeated here. Suffice to say that the volumes represent descriptive outlines of the culture history of the native people of Canada as discernible by archaeological means. It is also an admittedly personal view of the archaeological history of Canada with all the limitations inherent in a single individual attempting to control an impossibly massive body of data. Such a synthesis, warts and all, however, is needed and hopefully it will help to stimulate future and better syntheses" (Wright 1999:v). With the foregoing I am assuming that readers of this volume would also likely have access to the earlier volumes.

J. V. Wright,
Curator Emeritus,
Canadian Museum of Civilization,
Hull, Quebec

Date: September, 2003.

AVANT-PROPOS

L'objectif premier de ce livre et de ceux qui l'accompagnent est de renseigner le grand public sur l'histoire des Autochtones avant les incursions perturbantes des Européens dans le territoire qui allait devenir le Canada. Cependant, contrairement au cas des deux ouvrages précédents, la rédaction de ce tome a bénéficié d'un plus grand ensemble de connaissances archéologiques et de l'apparition tardive de documents sur la période de 500 apr. J.-C. aux premiers contacts avec les Européens. Il a donc fallu diviser le contenu en deux volumes distincts, tout en les considérant comme un seul livre. Le présent volume, qui constitue la partie 1, porte sur les cinq cultures suivantes: les Algonquiens des Maritimes; les Iroquoiens du Saint-Laurent; les Iroquois de l'Ontario; la culture de Glen Meyer/bassin occidental et les Algonquiens du Nord. La partie 2 du tome III abordera les régions plus à l'ouest et au nord avec des descriptions des cultures restantes des Plaines; du Plateau; de la côte ouest; les Athabascans du Nord; les Paléoesquimaux récents et les Inuits. De la même manière que la révolution agricole des Grands Lacs inférieurs et du haut Saint-Laurent occupe la plupart de la partie 1, il est prévu que la partie 2 porte principalement sur les événements entourant la migration des Inuits au Xe siècle – ce peuple qui a quitté l'Alaska pour s'établir dans le Nord du Canada et au Groenland –, et sur le sort concomitant des derniers Paléoesquimaux autochtones, les Dorsétiens.

L'événement le plus spectaculaire étudié dans la partie 1 du tome III est sans doute la révolution agricole qui a débuté dans la région des Grands Lacs inférieurs vers 500 apr. J.-C., puis s'est propagée dans celle du haut Saint-Laurent et les régions adjacentes. Les économies des anciens chasseurs et cueilleurs se sont transformées en économies horticoles fondées sur le maïs, les haricots, la courge et d'autres cultigènes tels que le tournesol et le tabac. La dépendance envers les plantes domestiquées a entraîné une révolution sociale considérable où les femmes devenaient les principaux producteurs d'aliments, remplaçant dans une large mesure les hommes dans ce rôle. On ne vivait plus dans des campements saisonniers transitoires, mais dans des villages permanents occupant jusqu'à 5 hectares (12,4 acres) et regroupant des milliers de personnes dans des longues maisons communautaires. Pratiquement tous les aspects de la culture ont connu une transformation. Cependant, à l'instar de l'histoire documentaire, l'histoire archéologique comporte des limites, comme l'illustre le chapitre 34 précisément. En effet, celui-ci aborde le débat actuel à savoir si les cultures de Glen Meyer et du bassin occidental constituent une seule culture ou deux cultures apparentées, et si elles étaient iroquoises ou algonquiennes. À l'exclusion des Iroquois du Saint-Laurent, des Iroquoi de l'Ontario, documentés historiquement comme étant des Hurons, Neutres, Tionnontatés

(Pétuns) et Ériés, et du concept culturel équivoque de Glen Meyer et du bassin occidental, les autres cultures de la partie 1 du tome III ont essentiellement continué d'affiner les pratiques culturelles des temps anciens que décrit le tome II.

La partie 1 du tome III suit le tome II en ce qui a trait à la pagination et à la numérotation des illustrations et des tableaux. Le livre débute donc à la page 1185, carte VI, tableau 23, planche couleur XX, figure 108, etc. Et, comme l'indique déjà l'avant-propos du tome II : « Certaines précisions relatives aux trois tomes, par exemple les raisons de leur rédaction, comment les années établies au radiocarbone ont été traduites en années civiles, l'orientation théorique et divers autres points, ont été fournies dans l'avant-propos et, particulièrement, dans vii l'introduction du tome I (Wright 1995), et ne le seront pas de nouveau ici. Il suffira de dire que les livres offrent un aperçu descriptif de l'histoire culturelle des Autochtones du Canada telle que l'archéologie permet de la découvrir. C'est également, de l'aveu de son auteur, une vision personnelle de l'histoire archéologique du Canada, avec toutes les limites inhérentes à la tentative, par une seule personne, de maîtriser un ensemble imposant de données. Une telle synthèse, sans aucun enjolivement, est cependant nécessaire, et il faut espérer qu'elle contribuera à stimuler l'élaboration de futures, et meilleures, synthèses. » [trad. libre] (Wright 1999 : v). Je présume donc que les lecteurs du présent tome ont aussi accès aux tomes précédents.

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septembre 2003

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ACKNOWLEDGEMENTS

As with the Preface, it is impossible to address Acknowledgements without repeating much of what has been stated in Volumes I and II and, therefore, certain aspects of the Acknowledgements will not be repeated here except for special exceptions. I would be most ungrateful if I did not repeat my expression of gratitude to the Canadian Museum of Civilization which, under its various name changes, has supported my research over the years including the publication of these volumes. An essential element of the foregoing are the Canadian taxpayers who, largely unbeknownst to them, have provided the financial support underlying much of the research being synthesized in these volumes. I also owe a continuing debt of appreciation to both my colleagues in the Archaeological Survey of Canada and the always reliable efficiency and cheerful assistance of the staff of the Library of the Canadian Museum of Civilization. Other staff of the Canadian Museum of Civilization also contributed to the work in a number of wide ranging ways. I take pleasure in acknowledging, for the third time, the line drawings of the map, the chart, and the majority of the figures by Mr. David W. Laverie, former draftsman with the Canadian Museum of Civilization.

Relevant to the current volume are the contributions of a number of individuals. I am most grateful to the constructive critical comments on Chapter 31, the Maritime Algonquians, by Dr. David L. Keenlyside, Archaeological Survey of Canada, Canadian Museum of Civilization, on Chapter 32, the St.Lawrence Iroquois, by Dr. Christian Gates St-Pierre of the Université de Montréal and the late Dr. James F. Pendergast, Research Associate, Canadian Museum of Civilization, and on Chapter 33, the Ontario Iroquois, by Dr. William D. Finlayson, former Director of the London Museum of Archaeology.

Permission to reproduce a number of photographs and figures was granted by the following individuals and institutions and are listed in the sequence in which they appear in the Volume: re. Chapter 31, to Dr. David L. Keenlyside, Archaeological Survey of Canada, Canadian Museum of Civilization, for providing a colour print of Colour Plate XX and to the Canadian Museum of Civilization for the print of Black and White Plate XLIV; re. Chapter 32, to the late Dr. James F. Pendergast for permission to reproduce the McKeown village site floorplan as Figure 114, and to Dr. Norman Clermont, Departement d'anthropologie, Université de Montréal for providing the print for Black and White Plate XLVI; re. Chapter 33, to Dr. William D. Finlayson for permission to reproduce the Figure 118 seriation chart; to Joyce M. Wright, Research Associate, Canadian Museum of Civilization, for allowing me to reproduce an important histogram relative to sampling factors as Figure 119; to Dr. Robert J. Pearce of the London Museum of Archaeology for providing the information on Neutral farming cabin sites illustrated

in Figure 120; to Dr. William D. Finlayson for permission to reproduce the Draper site village expansions as Figure 121; to Milton J. Wright, of the British Columbia Ministry of Aboriginal Affairs, for the detailed plan of a Uren house structure reproduced as Figure 124; to both Drs. William D. Finlayson and Robert J Pearce for the original art work by Ivan Kocsis of the Keffer site village expansion in Colour Plate XXIII; to Dr. William D. Finlayson for permission to reproduce Figure 125 illustrating over 500 years of village movements in the Niagara Escarpment area; to Dr. Susan Jamieson, Department of Anthropology, Trent University for providing the original stone pipe on the cover of the volumes for casting and photography and to Harry Foster, Photography Division, Canadian Museum of Civilization, for providing colour prints of said pipe for the composite Colour Plate XXIV created by Dawn Wright; to Dr. William D. Finlayson for permission to reproduce Figure 129 of Ontario Iroquois sites in the Metropolitan Toronto area and for providing illustrations of decorated bone objects; re Chapter 34, to Mr. Neal Ferris, Ministry of Culture and Communications, London, Ontario and Dr. William D. Finlayson for permission to reproduce elements in the Figure 131 composite; and re. Chapter 35, to M. Marc Côté and Recherches amérindiennes au Québec for permission to reproduce Figure 136 and to the former for original prints of the Inksetter site pipe; and to William A. Allen, Burk's Falls, Ontario for both permission to publish an a electronic digital copy of Black and White Plate LX of the French bronze mortar.

I am particularly pleased to acknowledge that the production of this volume, as with the preceding volumes, has very much been a family effort. My wife, Dawn, transferred my Corel WordPerfect files and the illustrations into Adobe Page Maker to produce a camera-ready copy of the Volume. This involved numerous technical challenges posed by scanning, layout, 'tweaking' often poor quality photographs and figures, and composition and layout in Adobe Photoshop. She also produced the CD-ROM of the Volume. Her skills and perseverance in the face of formidable electronic perversity have been an essential element in the quality of the finished product. Also, Dawn's broad botanical knowledge, particularly with reference to plant use, and her extensive botanical library have contributed immeasurably to aspects of plant use so frequently under evaluated in archaeological studies. Finally, Dawn's keen editorial eye caught many of the inevitable typographic, spelling errors, and just simply poorly worded statements. My daughter Joyce cast her perceptive editorial eye over some of the chapters with salutary effect in numerous areas. She also has a knack for discovering particularly quotable published comments which have been inserted into various parts of the Volume. As has been noted in the past, however, this volume has not been professionally edited and the reader's indulgence is solicited relative to grammatical and typographical errors which are an inevitable consequence, at least for me, of manipulating the mass of text involved. In the CD-ROM , the personal computer word-search function will fill the more traditional hard copy index. Hypertext links will also take the reader to any particular section or topic in the Volume, search for a particular word or subject within a chapter, print pages, cut and paste material, including text and graphics, from the electronic files for purposes of quotations or cross-references. Colour plates, unfortunately, occur as Black and White in the hard copy but are in full colour in the CD-ROM version.

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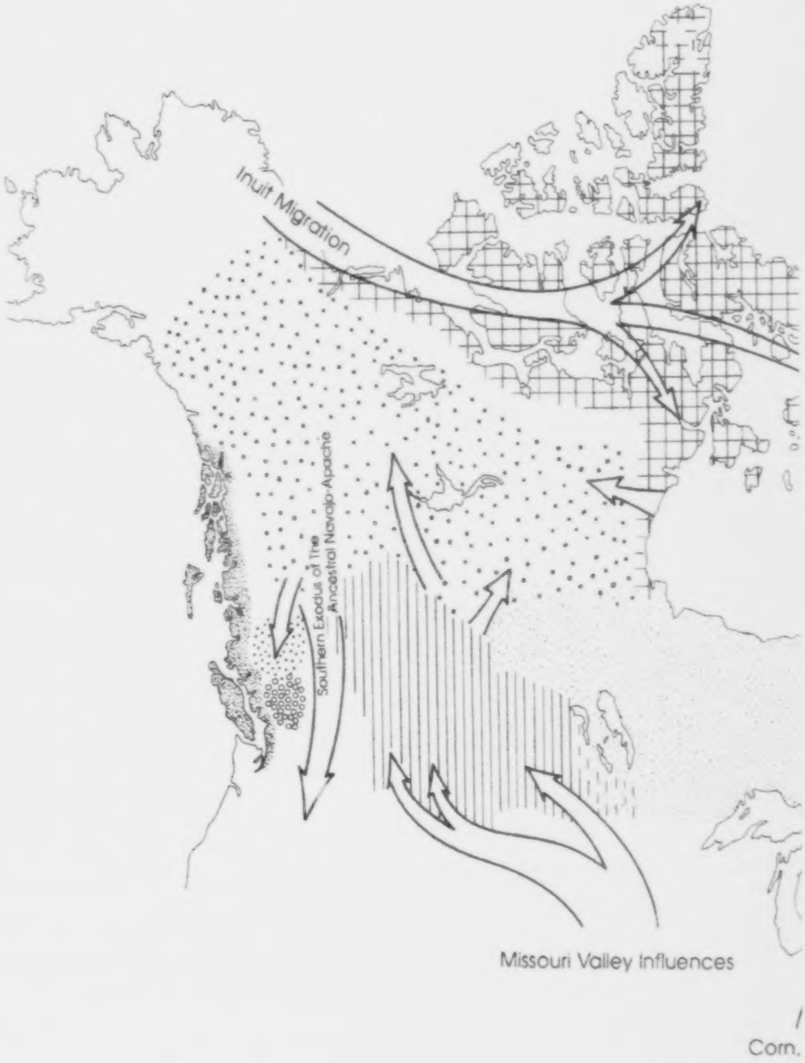
PROLOGUE TO PERIOD V

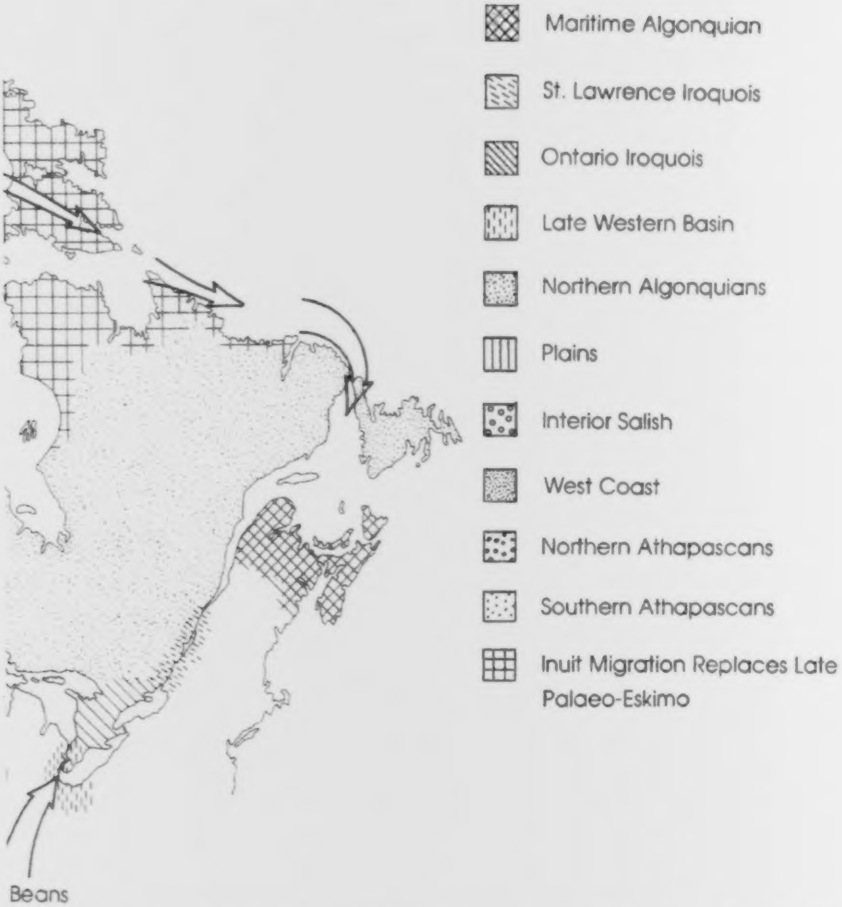
Period V extends from AD 500 to European contact. In general, European contact is regarded as occurring in the late 15th to early 16th centuries in the east and as late as the 19th century in northwestern regions of the country. European contact, however, actually began in the east in the 11th century with Norse explorations along the coast of North America and attempted southern settlements, such as that of L'Anse aux Meadows on the northern tip of the Island of Newfoundland (McGhee 1991:46-48). Thus, native and European contact was regionally variable in both its duration and intensity and can best be regarded as a process that began in the east and advanced to the west and northwest following an ascending time cline. Regardless of where contacts took place the results were regrettably the same for the native people; population decimation and cultural dislocation as a result of introduced diseases like small pox, involvement in European wars of possession, mainly between the French and the English, and major economic changes such as participation in an alien commercial venture based upon the furs. Alcohol susceptibility, loss of political control over their traditional lands, destruction of former economic systems which depended upon a range of natural food resources, in conjunction with disastrous population depletion and loss of control over their own futures, had devastating social consequences for the native people. This misery was then exacerbated by government policies aimed at absorbing the surviving native remnant populations into the mainstream population of Canada. Native people, however, have proved to be made of sterner stuff and not only survived the biological and sociological devastation of prolonged dominance by an alien culture but have increasingly been demanding, and in some instances getting, some degree of compensation for both their territorial and cultural losses. Nunavut, "Our Land", for example, will provide the 35,000 Inuit of northern Canada with considerable control over a large portion of the former Northwest Territories and, thus, their own destinies. The pending Git'san agreement in northern British Columbia represents another major agreement between native people and the two major levels of government. Currently, the Cree of northern Québec are deciding whether or not they want to make further territorial concessions to the Québec government's Baie James Hydro-Electric Project. The 21st century will witness a dramatically changed relationship between native people and the descendants of later immigrants. Neither Part 1 nor Part 2 of Volume III consider, in any detail, the historically documented events involving natives. The Volume is basically concerned with native history prior to the appearance of Europeans and, thus, is a history based upon archaeological evidence. An effort is made, however, to blend the archaeological history with the early documentary history. Both forms of recording human history, while quite different in their methods, have the common goal of attempting to understand the factors involved in past human events and developments through time and space. The self-evident proposition that there is only a single human history, composed of both archaeological and documentary dimensions, will be novel to many people who have tended to view history as only relating to documented evidence and archaeology as a separate and essentially unrelated discipline called prehistory, a subdiscipline of anthropology. The proposal that there is a single human history, albeit based on archaeological and documentary data bases, is not new. A quarter of a century ago Bruce Trigger, in a plea to abandon the arbitrary and erroneous separation of documentary history from archaeological history, stated that it was necessary "...to eliminate the White Man's dichotomy which has defined history as studying himself and anthropology as studying other people" (Trigger 1978:24). Certainly the rich body of early documentary information is invaluable in fleshing-out the admittedly lean skeletal framework that the discipline of archaeology has been able to construct. But then archaeology provides time depth to history and many kinds of insights rarely, if ever, to be found in written documents. Indeed, most regions of the world would have either no history or ones with very shallow time depths if history is to be narrowly defined as being solely based upon written documents.

With the arrival of Europeans came trade items such as copper kettles, glass beads, iron axes and knives. Such items were distributed through already extant trade networks long before there was actual face-to-face contact between most natives and Europeans. The appearance of European trade items on archaeological sites, used in conjunction with the early documentary records, permits the application of what is called the Direct Historical Approach (Steward 1942). In using this method an archaeological site containing European trade items is ideally associated with a historical documented location of an actual village which includes information regarding the people who occupied the village. Archaeologists then interpret archaeological sites in the same area lacking the European trade items but with an equivalent native technology as being related to the site possessing the European trade items. Thus, a string of related sites, beginning with the contact period can be traced back through time. Actually few archaeological sites has been so specifically located in the written documents as to be identifiable by archaeological means. It is more common for archaeologists to attribute the contact period sites of a region to the native people recorded by the first Europeans for that region. By a comparative method called seriation site relationships are strung back in time like beads on a string. The process permits an archaeologist to say that a particular string of sites terminated with a contact period Huron village visited by Samuel de Champlain or with the Micmac encountered by Father Pierre Biard. This does not necessarily mean that a site dated to AD 500 is either Huron or Micmac, per se, but that the occupants were ancestral to the people described by the early explorers and missionaries as Huron or Micmac, or, more accurately, tribal or band elements of the foregoing. By this process, long chronological sequences, traced by archaeological methods, can be associated with populations described in the early historical documents and in later ethnological studies. Native peoples can then be provided with information on the achievements of their ancestors provided by archaeology as a supplement to their oral traditions. Most human history around the world is what is left in the archaeological record. Documentary history is not only relatively recent but its geographical distribution, dependant as it is upon literacy, is also extremely spotty. European technology rapidly replaced the native technology with pottery vessels succumbing to metal kettles, stone axes and knives to iron equivalents, and so forth and with this replacement the archaeological identification of native sites from early European ones becomes difficult or impossible.

As was the case with Period IV (1,000 BC - AD 500) environmental conditions in Canada during Period V where similar to what was encountered by Europeans. Native cultures were established in their traditional homelands and cultural continuity up to the period of European contact was the rule. Diffusion of technology, belief systems, and other cultural systems were the major forces of cultural change. Undoubtedly the outstanding cultural event in eastern Canada during Period V was the adoption of plant cultigens in the Lower Great Lakes and eventually the Upper St.Lawrence Valley and adjacent regions on Lake Huron. Evidence of corn domestication has been recorded in Mexico as early as 5,000 years ago and may eventually prove to be even earlier in the Central American Lowlands. Its arrival in what is now Southern Ontario around AD 500 was followed by beans in the 11th century. Although only recently accorded their important contribution thanks to the application of more sophisticated archaeological field recovery methods, plants like squash, sunflower, and tobacco will likely be demonstrated to have preceded corn into Canada. Squash, a tropical cultivar, for example, has been found on archaeological sites in adjacent Michigan and Ohio which have been dated to 500 BC. As domesticated plant foods progressively came to form the economic base of the earlier hunter and gatherer communities there was a dramatic cultural transformation which terminated in the northern Iroquoian-speaking peoples. During this process women became the major food producers and previous seasonal hunting and fishing stations were, in large part, replaced with palisaded villages enclosing numbers of communal longhouse dwellings. Some of these villages were up to 5 hectares in size (12.4 acres) and contained as many as 38 longhouses which could have housed more than 2,000 people.


Inuit Migration
Southern Exodus of The Ancestral Navajo-Apache
Missouri Valley Influences
Corn.

MAP VI: CULTURAL DISTRIBUTIONS, AD 500 TO EUROPEAN CONTACT As
in this map relative to the information first published as Plate 9 of Volume I of the
changes relate to culture name changes and do not effect cultural geographic distri-
guide to the cultures discussed in Volume III and specifically to Part 1 of Volume III
(Drawing by Mr. David W. Laverie).


▩ Maritime Algonquian
▨ St. Lawrence Iroquois
▧ Ontario Iroquois
▥ Late Western Basin
░ Northern Algonquians
▥ Plains
⁘ Interior Salish
▒ West Coast
⁘ Northern Athapascans
⁘ Southern Athapascans
⊞ Inuit Migration Replaces Late Palaeo-Eskimo
Beans

with the cultural distribution maps in Volumes I and II there are a number of changes
Historical Atlas of Canada (Harris and Matthews 1987) from which it is adapted. Most
butions. Like the earlier maps Map VI is intended to act as a simplified geographic
involving eastern Canada and the southern Subarctic areas of the Prairie provinces

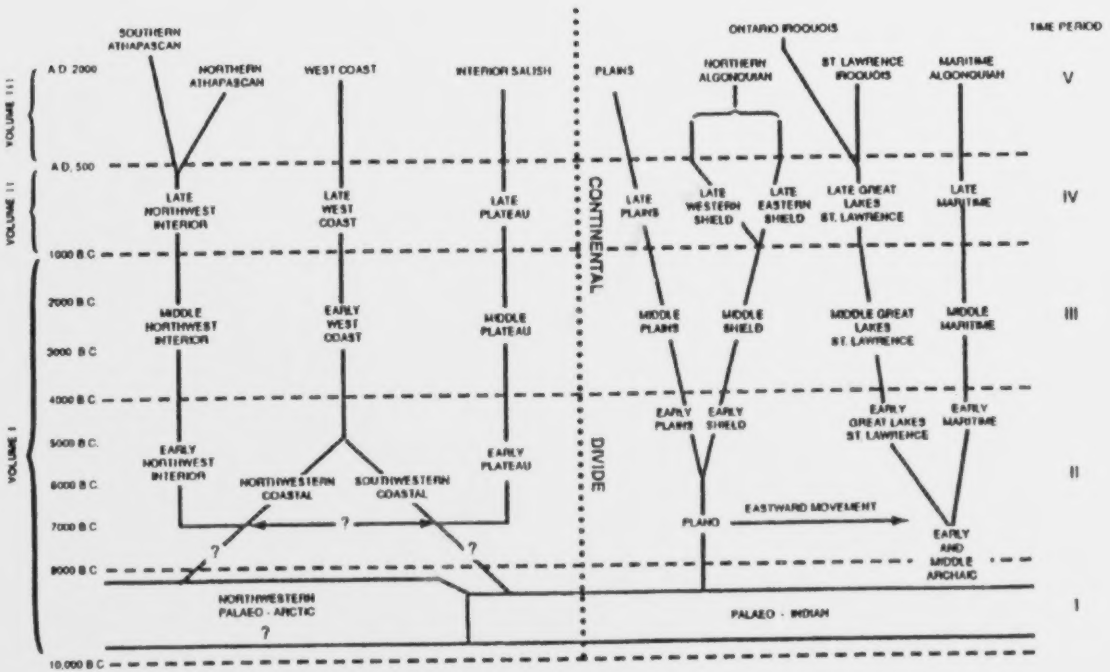

TIME PERIOD
V
IV
III
II
I
VOLUME III
VOLUME II
VOLUME I
A.D. 2000
A.D. 500
1000 B.C.
2000 B.C.
3000 B.C.
4000 B.C.
5000 B.C.
6000 B.C.
7000 B.C.
8000 B.C.
10,000 B.C.
SOUTHERN ATHAPASCAN
NORTHERN ATHAPASCAN
WEST COAST
INTERIOR SALISH
PLAINS
NORTHERN ALGONQUIAN
ONTARIO IROQUOIS
ST LAWRENCE IROQUOIS
MARITIME ALGONQUIAN
LATE NORTHWEST INTERIOR
LATE WEST COAST
LATE PLATEAU
LATE PLAINS
LATE WESTERN SHIELD
LATE EASTERN SHIELD
LATE GREAT LAKES ST. LAWRENCE
LATE MARITIME
MIDDLE NORTHWEST INTERIOR
EARLY WEST COAST
MIDDLE PLATEAU
MIDDLE PLAINS
MIDDLE SHIELD
MIDDLE GREAT LAKES ST. LAWRENCE
MIDDLE MARITIME
EARLY NORTHWEST INTERIOR
NORTHWESTERN COASTAL
SOUTHWESTERN COASTAL
EARLY PLATEAU
EARLY PLAINS
EARLY SHIELD
EARLY GREAT LAKES ST LAWRENCE
EARLY MARITIME
PLANO
EASTWARD MOVEMENT
EARLY AND MIDDLE ARCHAIC
?
?
?
NORTHWESTERN PALAEO - ARCTIC
?
PALAEO - INDIAN
CONTINENTAL
DIVIDE

CHART I: A SCHEMATIC AND SIMPLIFIED CHRONOLOGY OF THE ARCHAEOLOGICAL HISTORY OF CANADA This chart also appeared in both Volumes I and II and is reproduced here in order to assist the reader in following the geographic and temporal relationships of the various Period V cultures described in Part 1 of Volume III. The five time periods are demarcated from one another by a dashed line while the time periods considered in each volume are indicated on the left. Geographically the chart is oriented with the East to the right and proceeds across to the West on the left. Changes to the Period V portion of the Chart not provided in earlier versions are the lumping of 'Southern Athapascans' with 'Northern Athapaskans' and changing 'Interior Salish' to 'Plateau'. Palaeo-Eskimo and Inuit cultural developments are discrete from the above and are excluded from the Chart.

Cultural change in the rest of eastern Canada was not nearly as dramatic as the events initiated by the Agricultural Revolution of the Lower Great Lakes and changes were more in tune with earlier cultural practices. On the east coast of the Maritime provinces shell midden sites become increasingly common although this impression is probably, in part, a result of the obliteration of earlier shell midden sites by the severe coastal erosion which characterizes the region. The impressive mobility provided by water transport in ocean-going bark canoes, historically documented for the Micmac and related groups, is apparent in the pre-European archaeological record as reflected in both site locations and the distribution of exotic native trade items derived from distant locales. Circular, semi-subterranean single family wigwams become an increasingly common feature on sites. The elaborate mortuary ceremonialism reflected in the Adena Mortuary Complex of Period IV, however, is abandoned. Extending across the Subarctic from the Island of Newfoundland to the northeastern extreme of Alberta Northern Algonquian culture, the cultural base of the Beothuk, Montagnais, Cree, Algonkin, and Ojibwa of the contact period with Europeans, continued to reflect a migratory way of life keyed to seasonal resources first established by their ancestors thousands of years earlier. Pottery, as an element of technology so dear to the heart of the archaeologist, was only adopted as a significant trait in the extreme western regions of Québec and westward. In Ontario, Manitoba, and Saskatchewan a number of different pottery styles were incorporated into the local technology. The erection of burial mounds along the Rainy River region of Northern Ontario, adjacent Minnesota and southern Manitoba continued a mortuary pattern began in Period IV. Pictographs, likely representative of shamanic solicitations and generally painted on the faces of cliffs adjacent to water, become a common feature across the Canadian Shield of Ontario, Manitoba, and Saskatchewan but less so in Québec. Curious rock and boulder constructions, situated in isolated locations and referred to as vision pits or Thunder Bird Nests, occur from the Ottawa Valley across the north shore of the Upper Great Lakes into southeastern Manitoba. A distinctive grouping of cobble pertroforms, ranging from human/animal forms to abstract configurations, created by aligning cobbles on flat bedrock surfaces, have been identified in southeastern Manitoba. In general, however, cultural patterns across the enormous expanses of the southern Subarctic from Newfoundland to the northern Prairie provinces reflect their roots in preceding cultural patterns. This is not to imply that there were not other important developments such as the major Cree expansion to the northwest.

As noted in the earlier volumes the author is of the opinion that the process of expanding our understanding of human archaeological history has not been enhanced by a recent tendency to isolate theory from both data and the patterns and phenomena which can be abstracted from data in order to test hypotheses. It is these patterns and phenomena which can be, on occasion, incorporated within and contribute to a theoretical framework and by theory I mean an assumption based upon principles independent of the phenomena under investigation. For example, the assumption of sequential priority inherent in the stratigraphic deposits of an archaeological site are in accord with the geological law of superposition. Theoretical constructs following the above traditional definition, despite always being subject to modification, are of potential importance to the advancement of knowledge including archaeological knowledge. So-called theorizing, on the other hand, isolated from the empirical evidence necessary to test hypotheses and with little or no pragmatic application can only detract from the central task of illuminating past human behaviour and the factors underlying same. In short, such exercises divorced from facts constitute, in my opinion, a fruitless, arm-chair dream world of just-so-stories and have no place in serious scholarship. Indeed, the ideologists who would compartmentalize thought processes into intellectually constraining boxes and exclude other thought processes severely weaken the process of striving for knowledge which, by its nature, cannot abide artificially imposed limitations on the multiple ways knowledge can be viewed. Another gripe is that the findings of archaeology cannot be limited to a small, elite group of academics speaking only to one another. As was so aptly noted in the very first volume of American Antiquity on a tear-out sheet soliciting membership in the Society the Secretary-Treasurer, Carl E. Guthe stated, with reference to the new journal, "Your officers desire to have it meet the needs of both non-professional and professional students of the archaeological history of the Indians". More than half a century has passed since the preceding comment. It stands in marked contrast to some of the current so-called postmodern, revisionist archaeological musings pompously posing as theories of paramount importance. At risk of facing the accusation of being out of touch with the times, albeit it would be ironic for an archaeologist to be out of touch with time, I can only observe that much of the intellectual anarchy inherent in the current views of some academics can never be a substitute for the discipline of archaeology keepings its methodological, interpretational and resulting theoretical considerations, as broad and as flexible as possible and, at the same time, viewing myopic, empirically unsupported abstractions with a very critical philosophical eye. As has been noted, "Although no one can claim to offer arguments that decisively settle the matter, disunity in the content of science seems to proliferate rather than diminish as the sciences mature and specialize, leading to a recognition of greater complexity rather than a simplicity in the ontology of the subject domains" (Wylie 2000:230). Furthermore, archaeology is not the "dry dust of the past" but has always responded, and must continue to respond, to the social and political forces of an ever-changing world of values and needs. This is an unending process whereby "...divergent angles of vision represent the only resource we have for recognizing when our best guesses, and our most deeply entrenched convictions, are limited and limiting" (Wylie 1993:12). Some current examples of changing foci relate to addressing the limitations imposed by past colonial myth-making and gender bias. There can be little doubt, given the fact that the vast majority of archaeologists come from urban environments which provide little practical experience regarding the environments that the subjects of their research had to cope with, has had an effect on how archaeologists view archaeological evidence. For example, it has been speculated that horticulturists built palisades, not for defence from enemy attack, but to protect the village occupants from marauding bears and other wild beasts! It is far more likely that the fat-deprived villagers would have thrown the gates wide open for any plump bear silly enough to enter. While no one is free of the personal limitations of cultural bias when it comes to the difficult task of reconstructing past human behaviour of other cultures from the fragmentary cultural fabric left by time and nature, it behoves all practitioners of the discipline to be constantly on guard to reduce the insidious influences of ethnocentrism as much as possible and to accept the humbling fact that their brilliant interpretations will undoubtedly be subject to future modification and even out-right rejection.

CHAPTER 31

MARITIME ALGONQUIAN CULTURE

Précis:

At the time of initial European contact in the early 16th century, excluding possible limited Norse contacts in the 11th century, what is here referred to as Maritime Algonquian culture consisted at the period of European contact of the Passamaquoddy of southeastern New Brunswick and adjacent Maine, the Maliseet to the north along the St.John River drainage, and the Micmac in northern New Brunswick, Nova Scotia, Prince Edward Island, and portions of the Gaspé Peninsula of Québec (Snow 1978: Figure 1, 59). Such an overarching cultural designation is in accord with the cultural nomenclature used throughout these volumes. All three native groups shared a number of language characteristics as members of the Eastern Algonquian language category (Goddard 1978: Table 2). When compared to both Plains and Central Algonquian languages, the differences in the Proto-Eastern Algonquian language "...is abrupt enough to suggest that Eastern Algonquian has been separated from the rest of the family by intervening Iroquoian languages since the very earliest period of its development" (Goddard 1978a:586). Linguistically, however, Micmac is somewhat distinct from the other two groups; a situation which may reflect the complex and poorly understood cultural developments which took place just prior to 1,000 BC when a combination of indigenous cultural development and a population intrusion from the south followed by a blending of these two phenomenon, may have taken place (Wright 1995:182-184). While the Maliseet and Passamaquoddy language dialects are mutually intelligible (Erickson 1978), the term Maliseet is a Micmac word for speakers of a corrupted language suggesting some degree of difficulty in communication. Both early historical documentation and 20th century ethnological studies pertain mainly to the Micmac, the larger of the three groupings of independent people composed of a number of bands.

All Maritime Algonquian populations were drastically reduced as a result of the introduction of European diseases, like smallpox, measles, and typhus, against which they possessed no natural immunity (Brasser 1978). Even as early as the beginning of the 17th century the Micmac were complaining that their population had been markedly reduced since their contact with the French (Thwaites 1959:105). Further population losses were suffered as allies of the French in the French-English struggle for control of eastern North America. It has been estimated that, by the end of the 17th century, between 70% to 90% of the native people of the Maritimes had perished from European diseases and the ravages of alcohol (Bailey 1969). As a result, "There were few Elders left to pass on the stories and the knowledge of the Old Ones, and there were few children left to learn" (Whitehead 1991:266). Although there is documentary evidence there had been considerable native contact with the Basques during the 16th century, the latter did not settle in Acadia like the French. Information on Micmac, Maliseet and Passamaquoddy lifeways can be found in brief summaries, such as in Volume 15 of the Handbook of the North American Indians (Trigger 1978a) and elsewhere (Jenness 1955; McMillan 1988) More detailed studies are also available (Mechling 1958-1959; Wallis and Wallis 1955; 1957). A major compilation of papers on the Micmac, edited by Charles A. Martijn (1986), contains important information derived from a number of disciplines, including archaeology. The aforementioned volume also provides an extensive bibliography. In addition to the foregoing is a useful archaeological bibliography for the Maritime provinces, including a site and author index (Turnbull and Davis 1986). An exemplary instance of communicating with the general public can be found in the marriage of archaeological and documentary information to produce a cultural reconstruction published through a cooperative effort between the Micmac community of Red Bank in New Brunswick and an archaeologist (Allen 1992). As a result of the long association between the Recollet missionaries and French administrators with the Micmac there exist some excellent, detailed historical documentation (Denys 1908; LeClercq 1910).

The Maritime provinces and the Gaspé region of Québec are strategically located in terms of not only the Atlantic seaboard but also the St.Lawrence River which provided access to the interior of the Continent. Another important river route was the Saint John River which connects the Bay of Fundy on the Atlantic, with a relatively short portage, to the St.Lawrence River. The complex geology of the region has had a major impact upon landforms. In addition to geological complexity, there are considerable local differences in the nature of the shore and sea interface making any uniform human coastal occupation most unlikely (Sanger and Kellogg 1989). The combined factors of differential coastal erosion, spotty archaeological survey and excavation, and variations in local food resources, have further complicated the interpretation of the archaeological record and, in particular, as they pertain to broad generalization touching on human adaptations. With reference to the last factor, for example, the Bay of Fundy has tides up to 18 m which bring nutrients from the ocean floor to the surface leading to plankton blooms upon which an exceptional marine productivity is based (Sanger 1988). These modern conditions of tidal mixing have existed for at least 3,000 BC. With reference to coastline complexity,

> "...general coastal trends of the area are controlled by the regional southwesterly-northeasterly trending structures associated with the Appalachian system. Superimposed on this basic geologic framework, the contrasting shoreline types result from the high degree of variability in local geology, relief, wave-energy levels, tidal range and sediment availability" (Owens and Bowen 1977:1).

A major factor affecting how people distributed themselves across the land was the considerable mobility provided by water transport in ocean going bark canoes and, particularly in the interior, hide sheathed canoes. Other than the St.John River, the region has few major river basins and estuaries but many small rivers and interconnected lake systems. For some appreciation of Micmac seamanship in the Gulf of St.Lawrence and southern Newfoundland see Martijn (1989). Only a few areas were a significant distance from the seashore. This varied physiography, with its highlands, lowland plains, river drainages, lakes, and coastal areas, forming a diversity of ecological zones, resulted in a considerable degree of variability in both the subsistence and settlement patterns apparent in the archaeological record.

Maritime Algonquians were essentially egalitarian, lacking an equivalent of the complex ranked societies of the West Coast. While there was a hierarchy of local band chiefs, district chiefs, and a supreme chief among, at least, the Micmac, this arrangement appears to have been a political convenience and is not necessarily indicative of a ranked society; no more than is the evidence that some family lines were regarded as being more important than others. Consensus had to be unanimous on any issue. While new chiefs were frequently the eldest son of a chief, inheritance was not in itself a sufficient criterion to be elevated to a chiefly position as demonstrated skills were also regarded as an essential qualification. Not all scholars would agree with the foregoing regarding the essentially egalitarian nature of the societies in question (Miller 1983).

The archaeology of the Maritimes and adjacent Maine and Québec is best known during Period V, mainly due to site preservation. Sites, to varying degrees, were not as seriously impacted by rising sea levels as earlier coastal occupations. Coastal erosion of Period V sites and the damming of interior river systems have, however, seriously damaged the archaeological data base. Maritime Algonquian archaeological technology, like that of their predecessors during Period IV (1000 BC-AD 500), consisted mainly of pottery cooking vessels, a distinctive stone tool assemblage dominated by notched projectile points, predominantly arrowheads during most of Period V, abundant small end scrapers and bifacial knives of a number of forms, chipped and ground celts, and, of course, the omnipresent utilized flakes which acted as expedient tools to be quickly discarded after they had served a wide range of purposes. As the majority of the coastal sites contain shell middens, the shell has, in part, neutralized the normally acid soils and, thus, bone preservation exists permitting the recovery of organic tools such as beaver incisor knives and chisels, unilaterally barbed harpoons, some with a basal line hole, and awls. In the local classification system of the Maritimes and Maine, Period IV (1,000 BC - AD 500) and Period V (AD 500 - European contact), as used here, are subsumed under a Ceramic Period. The Ceramic Period has been further subdivided into Early, Middle, and Late units. The Period V Maritime Algonquian sites under consideration include the late end of the Early unit and both of the Middle and Late units. The term "Woodland", used throughout the rest of the eastern North America, is eschewed on the grounds that pottery simply represents an element of technology adopted by pre-pottery societies and was not representative of a cultural stage (Rutherford 1991:109) although others still find a Maritime Woodland category useful (Dr. David Keenlyside, Archaeological Survey of Canada, personal communication). In fact, the concept of the Woodland Period as a cultural stage involving major changes from that of the preceding Archaic Period, has been abandoned by virtually all researchers in the east long ago and the term has been used simply as a convenient chronological marker used to distinguish pre-pottery earlier occupations from those characterized by the presence of pottery vessels. The foregoing is not intended to suggest that significant cultural events did not take place in the Maritime provinces during portions of Periods IV and V. There was the introduction of the bow and arrow weapon technology, pottery, and certain western and southern mortuary cult elements.

One of the most dramatic changes during Period V was the sudden replacement of the earlier pottery styles decorated with dentate stamped impressions with cord-wrapped stick decorated pottery, some with shell or shell and grit temper. Part way through Period V the dominance of the bow and arrow over the earlier spear and dart weapon systems took place. While the dramatic change in pottery decorative techniques and other pottery attributes was part of a widespread phenomena across eastern North America, the popularity of the bow and arrow in the Maritimes appears to have been a relatively late event when compared to adjacent regions. The foregoing abrupt technological changes, however, do not mask the cultural continuity from Period IV.

Virtually nothing is archaeologically known about either **Cosmology** or **Human biology**. While there is documentary, and archaeological information concerning late 16th and early 17th century burial practices, virtually nothing has survived of pre-European burial practices. If, for example, bodies were interred away from the habitation area, with its acid neutralizing shells, the normally acid soils would dissolve all evidence of human burials unless unperishable grave offerings were included in the graves. The same situation would apply to dog burials. Fragmented dog remains are common in the habitation debris of sites but the consuming of dogs, as elsewhere in eastern North

America, had particular ceremonial and important social significance. The fact that other mammal remains from archaeological sites exhibit little evidence of having passed through the digestive system of dogs (Stewart 1986), which leave distinctive markings, suggests that a taboo existed against permitting dogs access to discarded bones lest the spirits of the game animals be offended. Evidence for the existence of pre-European petroglyphs or rock art in the Maritimes, such as found further south in Maine (Snow 1980), is lacking (Gagnong 1904). Archaeological evidence of **External relationships** with neighbouring people is much better than evidence relating to the preceding two categories thanks to some effort at finger-printing exotic stone materials from archaeological sites to their geological sources. Historical documentation indicates wide ranging relationships with other people in the 16th and 17th centuries. There is even some indications of possible 11th century Norse contacts.

The Micmac, Maliseet, and Passamaquoddy bands still occupy minute holdings of their former territories but even here they sometimes come into conflict with the dominant society as competition for the limited fishery resource becomes increasingly intense. Some past injustices have been at least partially corrected but there is still a long way to go before the descendants of the Maritime Algonquians achieve economic stability similar to that of their White neighbours who now occupy their former lands and exploit their former resources, marine and terrestrial.

Cultural origins and descendants:

Unlike the controversy surrounding the nature of the cultural transition from late in Period III (4,000-1,000 BC) to Period IV (1,000 BC-AD 500), such as whether it was culturally a lineal or a bilineal process, or involved a population replacement, or some combination of the preceding (Sanger 1975; Wright 1995: Chapter 14), there is consensus regarding an 'in place' cultural development from Period IV into Period V up to the time when Europeans encountered the indigenous people of the east coast. From about the beginning of the Christian Era to the time of European contact in the Passamaquoddy region of the Bay of Fundy, for example, there is continuity in settlement patterns, subsistence practices, and technology. While there appears to be considerable time depth to the 'in place' development of all of the Eastern Algonquian-speaking peoples (Snow 1978:60) there are still certain cultural distinctions which may eventually prove to be products of the complex cultural changes which appear to have taken around 1,500 BC. With reference to language, it has been suggested that Proto-Eastern Algonquian, with one minor exception, is "...the only clear instance of a subgrouping within Algonquian..." and it is further hypothesized that the language group spread from the Gaspé region south along the Atlantic seaboard (Foster 1996:99). Archaeological evidence which could possibly cast light on the dialect split between Micmac and Maliseet/Passamaquoddy still needs to be elucidated. Regardless of attempts to accommodate certain linguistic distributions with the archaeological evidence, an admittedly hazardous undertaking at the best, over the last 2,000 years "Most of Maine during this time was closely related to events in New Brunswick and Nova Scotia" (Sanger 1979a:114). In contrast, it would appear that along the coast of southern and central Maine cultural relationships had more in common with southern New England than the north (Ibid:113). The suggestion of distinctly different coastal versus interior "ethnic" populations in southern Maine, based upon different fabric characteristics preserved on the surfaces of fabric-impressed pottery vessels (Petersen 1996; Petersen and Wolford 1997), cannot be tested further north given the following: the general scarcity of pottery from interior sites; the relative lateness of the introduction of cord impressed pottery into the area; the fact that most of the Maritime provinces have limited interior areas, such as Nova Scotia and Prince Edward Island; and the limited pottery data base from the Maritimes (Petersen 1996: Maps 6.1 and 6.2). Further, the fact that the same Z-twist and Z-weft slant elements of fabric construction occur on both the coast and the interior after AD 1000, as well as the presence of shell tempered pots in the interior, suggests significant cultural exchanges between the coast and the interior. In the few instances where there is significant evidence of human occupations far into the interior, such as in the Témiscouta region of Québec on the headwaters of the Saint John River, it is apparent that the rich chert deposits of the area had attracted people far upriver (Chalifoux et al. 1998). Finger-printing of exotic stone from the region indicates an exceptional wide range of contacts including the Atlantic coast (Ibid: Fig. 6.55). At the Brown site, on a coastal inlet east of Halifax and occupied throughout Period V, there is little evidence of cultural change. In fact, continuity and technological sameness characterize the site (Sheldon n..d.:112-113). This would appear to be a general characteristic of all sites in the area under consideration.

The only striking changes during Period V recognizable in the archaeological record are all in the realm of technology. Pottery decorated with a toothed implement, described as dentate stamped or rocker stamped depending on how the tool was used, is characteristic of Period IV and the first part of Period V but is suddenly replaced with pottery decorated with a cord-wrapped stick. This change in the technique of decorating pottery was a widespread phenomenon which took place across much of eastern North America at approximately the same time. It is also during Period V that the earlier chipped stone stemmed dart heads and spear tips were largely replaced with much thinner and lighter notched arrowheads. The remainder of the technology, however, remained largely unchanged from the preceding period.

Relative to cultural continuity and the geographical distributions of the native people recorded in the documentary records it is necessary to entertain the possibility that European and native contacts may have had a longer history than the surviving documents would suggest. In AD 1534, when Jacques Cartier entered the Bay of Chaleur between the southern Gaspé Peninsula and northern New Brunswick, he was greeted by forty to fifty canoes of people who obviously wanted to trade. While it has been suggested that the language he was addressed in was a pidgin language of Micmac and Portuguese (Whitehead 1991:240) this proposition has been questioned on the grounds that the language was Micmac lacking any Portuguese elements (Dr. Roy A. Wright, Marlboro College, Marlboro, Vermont: personal communication). Regardless of the language used during this early contact between the French and the Micmac if there were fifty canoes and if they had held five men each, totalling 250 men, then allowing for the women, children, and others not in the canoes, there could have been a concentration of nearly 1,000 people in one small area. This density of people by no means represents a normal Maritime Algonquian settlement, as is readily apparent from the archaeological record. It would appear likely that the locale functioned as an agreed upon warm weather native and European meeting place. Initially the trade would have been with Portuguese seasonal whalers/fishermen and would probably have taken some time to become established in order to develop the formal procedures acceptable to both sides.

Cultural continuity of Late Maritime culture from Period IV along the Gaspé coast into Period V (Wright 1999:Chapter 22), as evidenced by sites like Cap-Chat (Barré 1975), could explain the hostilities between the Micmac and the St.Lawrence Iroquois of the Québec City area recorded by Jacques Cartier (Biggar 1924). Conflict between the two groups could have initiated by a St.Lawrence Iroquois expansion into the Gulf in order to exploit the rich maritime resources and, in doing so, trespassing upon traditional Micmac hunting and fishing territory.

Period V sites are well dated in the Maritimes and Maine. A published source of radiocarbon dates and their associations is available online (Morlan 1999) as well as in publications (Chalifoux et al . 1998: Fig.5.4; Petersen and Sanger 1991; Sanger 1987; Taillon et Barré 1987; and Wilmeth 1978).

Technology:

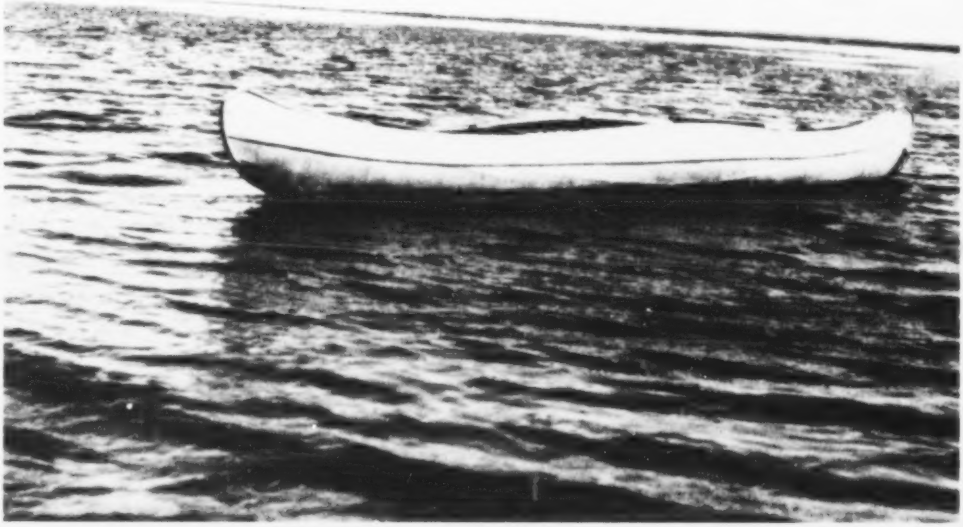
Maritime Algonquian archaeologically identifiable technology is primarily represented by the chipped and ground stone and pottery industries. Supplementary early historical documentation relating to technology is generally limited to the Micmac. Bone preservation is poor due to the naturally acidic nature of the soils, being often non-existent and, therefore, with some notable exceptions, the bone tool industry is not nearly as well known as the stone and pottery industries. Small, chipped stone end scrapers, generally less than 5 gm in weight, are very common as are the ubiquitous utilized expedient flake tool. Projectile points are mainly stemmed dart and spearheads in the early part of Period V but rapidly give way to thin, corner-notched and side-notched arrowheads. Trianguloid biface knives are also common. The frequencies of pottery vessels can vary significantly from site to site. At the Carson site on Passamaquoddy Bay, New Brunswick, for example, even though forty percent of the site was excavated, only two pottery vessels were recovered from the Period V deposits (Sanger 1987). In contrast, 32 vessels were excavated at the Delorey Island site in Nova Scotia (Nash 1986:99) and 220 vessels came from the Eisenhauer Shell-Heap site in Mahone Bay on the south coast of Nova Scotia (Wintemberg 1929:116). Early in Period V vessels are grit tempered, conoidal base globular forms, decorated with a toothed implement to produce either geometrically arranged dentate stamped impressions or rocker stamped designs. These pottery attributes clearly derive from the Period IV pottery industry but are suddenly replaced with cord-wrapped stick and punctated patterns. Shell tempering of vessels also appears for the first time although in association with the earlier grit temper or mixed with it. Chipped and ground stone celts are not common but do occur on most sites. Where bone preservation exists beaver incisor knives or chisels are usually the dominant tool. These native antecedents of the later iron crooked knives show a strong preference for the mandibular incisors over the maxillary incisors with a ratio of 5:1 (Sanger 1987). Often the entire mandible is represented with the jaw proper functioning as a convenient handle. Other bone implements are unilaterally barbed points and harpoons, bipointed fish gorges, points, awls, eyed needles, combs which would have functioned as hair pieces rather than combs proper, and fish spear leister points.

For comparative purposes and to provide some impression of regionalism in Maritime Algonquian technology brief consideration will be given to a site in the Gaspé and some sites in Nova Scotia. The AD 700 Cap-Chat site on the Gaspé coast of Québec (Barré 1975) produced considerable chipping debris and fire fractured rock, the latter used in cooking and heating. Artifacts consisted of stemmed, corner-notched, and side-notched points, trianguloid and bipointed bifacially chipped knives, small end scrapers, some side scrapers, a strike-a-light, a hammerstone, and a single pottery vessel. The vessel was collarless with horizontal cord-wrapped stick impressions crossed by short vertical stamped impressions. A major implement category, referred to in the Cap-Chat report as "eclats retouches", did not distinguish between purposefully retouched flakes and flakes simply exhibiting signs of use-wear. On the whole the assemblage is similar to assemblages from sites in the Maritime provinces. This is apparent in one of the earliest reported investigation of shell midden sites in the Maritime provinces despite the unfortunate lumping of the recoveries from a number of sites in Marigomish Harbour, Nova Scotia (Smith 1929). On the basis of the predominantly small contracting stemmed projectile points it would appear that the major occupation of the area pertained to the earlier portion of Period V between AD 500 and 1000 and would thus be contemporary with the Chap-Chat site. Other items reported are triangular biface knives, a relatively limited numbers of stone scrapers, simple bone points, unilaterally barbed harpoons, rare bone fishhook shanks which resemble the problematical bone objects from the

Delorey Island site to the east in Tracadie Harbour (Nash 1986: Fig.19 & p.102), a couple of native copper awls, stone celts, hammerstones, an abrader, paint stones, beaver incisor knives, bone wedges, flakers, awls, tooth pendants., and pottery. A small shell midden, the Eisenhauer Shell-Heap site in Mahone Bay, was completely excavated (Wintemberg 1929). Situated approximately 100 km west of Halifax, the site produced corner-notched arrowheads, trianguloid biface knives and/or preforms, bone points, a few unilaterally barbed harpoons, a bilaterally barbed harpoon, chipped and ground stone axes and adzes, abraders, hammerstones, beaver incisor and woodchuck (*Marmota monax*) incisor knives, awls, two hammered copper nuggets, an abundance of end scrapers, and pottery. Particularly interesting are the estimated 220 pottery vessels with grit or shell temper and some vessels lacking any evidence of tempering. Shell and grit tempering occurred in equal frequencies and many of the vessels possessed coil breaks indicative of the manufacturing method used. Vessel interiors were frequently roughened, plain exterior surfaces were common, and decorative techniques consisted of punctating, incising, linear and dentate stamping, rocker stamping, and cord-wrapped stick impressions with the latter being the most common decorative technique. Simple motifs composed of horizontal, oblique, and vertical elements created with a cord-wrapped stick dominated the collection. Evidence of a single encircling row of exterior punctates, so common throughout most of the Maritime provinces, appear to have been absent. In the same general area of coastal Nova Scotia is the seasonally occupied Brown site, situated on a salt water inlet back 11 km from the coast (Sheldon 1991; n.d.). Projectile point styles followed a continuum from straight stemmed forms to corner-notched points plus some contracting stemmed and bipointed points. Small end scrapers were the most common implements. Other items were a range of biface knife forms, gravers, choppers, celts, hammerstones, and choppers. By AD 800 corner-notched arrowheads dominate and shell tempering of the pottery vessels appears. Most of the pottery was manufactured by the coiling technique and decorated with cord-wrapped stick impressions.

A vitally important element of Maritime Algonquian technology, which has never been recovered from an archaeological site and is not likely to be, is the birch bark canoe. In a similar fashion, other important technological contrivances, such as snowshoes, sleds, and toboggans, are archaeologically invisible. In fact, the word "toboggan" is derived from the Micmac word "taba'gan". Speaking of the Micmac on the Bay of Fundy, Nova Scotia in the early 17th century Father Pierre Biard described the birch bark covered canoes as having closed decks fore and aft, being 2.2 to 3.0 m in length, and capable of accommodating five to six people, dogs, and baggage (Thwaites 1959:83). Some of the ocean going bark canoes were considerably larger, being up to m in length, 0.76 m across the beam, and 0.51 m in depth at midship (Marshall 1986, Sanger 1981:91). Being readily portable, bark canoes could accommodate both river portages and prudent peninsula portaging along intertidal waterways. Canoes were used to reach islands from 10 to 16 km offshore and could even cross the 160 km of open water between Nova Scotia and Maine or the 90 km between Cape Breton in Nova Scotia and the Îles de la Madeleine in the Gulf of St.Lawrence. Such ocean voyages clearly support the observation that "Seamanship, the knowledge of marine environments and boat handling, becomes another prerequisite to be added to knowledge of food species availability and suitable technology" (Sanger 1987:119). Some indication of the importance of the canoe to the Micmac can be inferred from the 70 words applied to canoe construction and use (Marshall 1986). There is an excellent description of the complex procedures involved in the construction of a Maliseet canoe (Wallis and Wallis 1957:6-8). Despite claims to the contrary (Snow 1980:197), there is no evidence, either archaeological or in the early historical documents, for the construction and use of dug out vessels manufactured from hollowed-out logs. Micmac canoes differed slightly from those of the Maliseet and Passamaquoddy in their distinctive elevated mid-gunnels superficially resembling those of the Beothuk of Newfoundland. This similarity in canoe construction, along with the dialect differences relative to their more southerly neighbours, has led to the suggestion that the Micmac "...may have been late intruders into the Maritimes coming perhaps from the northwest" (Jenness 1955:268). As was noted in the section on **Cultural origins and descendants**, cultural and linguistic distinctions between the Micmac and their immediate neighbours to the south more likely reflect the complex cultural events that appear to have taken place in the region towards the end of Period III.

There were hazards involved in coastal canoe travel that extended beyond the risks posed by heavy seas, tidal bores, perverse weather, and the like. Likima, a Micmac shaman-chief, has provided an early detailed description of killer whale (*Orcinus orca*) attacks on canoes (Whitehead 1991:235-237). As the attacks appear to have involved single animals they were most likely by males who had isolate themselves from the pod of females and juveniles (Banfield 1974:263-265). While there are no scientifically confirmed records of attacks on small water craft killer whales "...are feared by Eskimos, whalers, sealers, and fishermen" (Ibid:264). Such fear would likely have been based upon firsthand experience and/or oral tradition. Needless to say, an attack by a large predator like the killer whale on a small water craft is not likely to leave witnesses. According to Likima, the Micmac armed themselves with special bone tipped lances in order to ward off a killer whale attack. Another animal hazard not mentioned by Likima was the possibility of attack by the great white shark (*Carcharodon carcharias*). These large sharks are coastal cruisers who are frequently caught in herring weirs and some of the largest specimens have been reported from Maritime waters. Great white sharks have been known to attack small wooden fishing boats (Scott and Scott 1988:16) suggesting that bark canoes would have been even more vulnerable to attack regardless of whether the attack was purposeful or a case of prey misidentification on the part of the shark.



BLACK AND WHITE PLATE XLIV: A MICMAC OCEAN BIRCH BARK CANOE This canoe was photographed by W.H. Mechling in 1903 at Burnt Church, New Brunswick (CMC negative 24979).

Pottery vessels, with their multitude of clearly definable characteristics, are sensitive indicators of temporal change and spatial variation and, thus, have proven to be particularly useful to archaeologists. Although it has been suggested that the manufacture of pottery vessels was abandoned prior to the arrival of Europeans the scarcity of pottery on certain Period V sites and the mixed, multi-component nature of the sites in question, renders such a proposition questionable. Certainly, when copper, brass, and iron kettles became available they would have quickly replaced their friable pottery predecessors. During Period V the finely moulded, carefully fired, dentate decorated pottery of PeriodIV was replaced with much thicker and more crudely manufactured, cord-wrapped stick decorated vessels (Davis 1991:105). This fissile pottery, some with coil breaks and shell tempering, was generally decorated with horizontal, oblique, and vertical impressions of cord-wrapped stick in various combinations. A row of circular punctates producing interior bosses was also a common decorative element. Such vessels "...never assumes the numerical importance that it does elsewhere in North America" (Sanger 1979a:111). They tend to extend down from a wide mouth to the shoulder area and then contract to a conoidal base. Conoidal based vessels were eventually replaced by more globular forms towards the end of Period V (Petersen and Sanger 1991). By AD 1000, not only do pottery vessels decrease in importance relative to earlier times but shell temper replaces grit temper (Ibid:113). Designs are also limited to the upper rim. As already noted, the occurrences of pottery vessels can be quite variable and can range from two vessels at the Carson site in New Brunswick (Sanger 1987) to 51 vessels at the Brown site east of Halifax, Nova Scotia, two sites with approximately the same time depth of human occupation (Sheldon n.d.). At the latter site, vessels were coil constructed with either grit or shell or a combination of these tempering materials, rims were slightly everted and vessels had globular shaped bodies with rounded bottoms. Orifice diameters ranged from 18 to 28 cm and sherd thickness from 6 to 14 mm with a mean of 8.3 mm. Of the 45 decorated vessels, 44 were decorated with cord-wrapped stick impressions.

In northern New England and specifically Maine significant differences in the occurrences of the spin and twist directions of fibre cordage, as recorded in pottery impressions, between coastal sites and contemporary interior sites have been recorded. Between 1,000 BC and European contact, pottery impression from coastal sites are characterized by Z twist and S spin cordage as well as Z-twist weft-twined fabrics whereas in the interior S twist and Z spin cordage and S-twined fabrics predominate (Petersen 1996). A major comparative study of these cordage characteristics in the fibre industry involving a large number of tribes from Greater Amazonia (Petersen and Wolford 2000) convincingly demonstrated that such culturally determined cordage characteristics correlate with boundaries between tribes. For archaeology the potential for demarcating boundaries between contemporary and neighbouring populations through the study of cordage impressions left on pottery vessels is of obvious importance. But such an approach cannot be applied to groups who did not impress their vessels with a distinctive array of cord-wrapped objects and fabrics and this effectively removes the late Maritime pottery from consideration as does the close proximity of coastal and interior sites to one another.

In addition to sudden changes in pottery vessels characteristics during Period V there was an equally dramatic change in the forms of the chipped stone projectile points. Around AD 1000 the earlier, thick, contracting stemmed dartheads and spearheads were replaced by thin corner-notched and side-notched points interpreted as evidence for the introduction of the bow and arrow weapon system (Rutherford 1991; Sanger 1987).

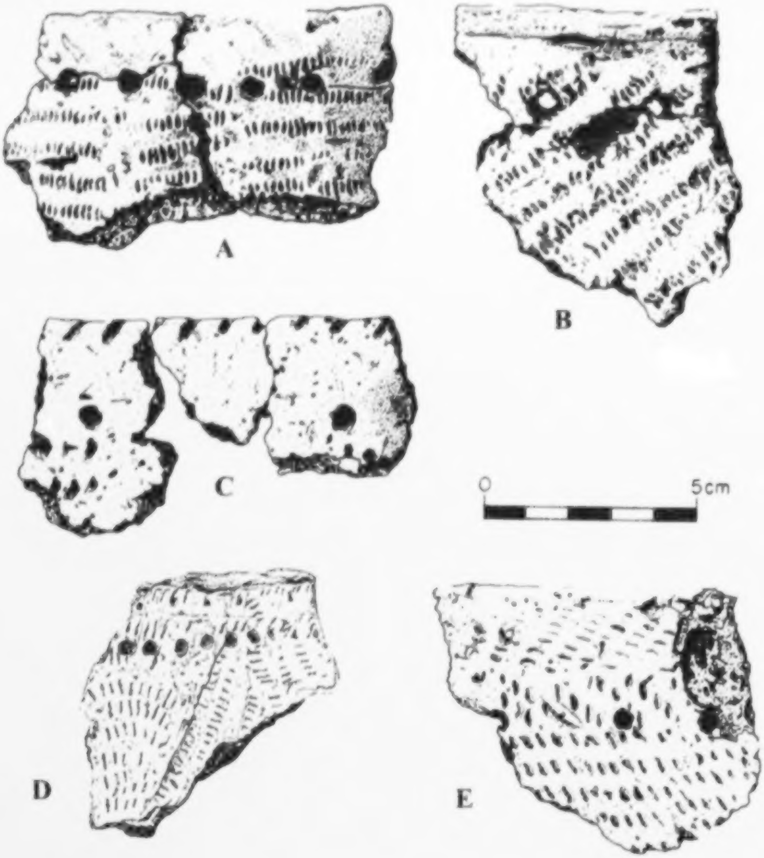


FIGURE 108: MARITIME ALGONQUIAN POTTERY RIM SHERDS These typical, thick, and poorly modelled and fired, cord-wrapped stick impressed vessel rim fragments, with the exception of the rim in the lower left hand corner, came from sites in Passamaquoddy Bay on the New Brunswick side of the Bay of Fundy. The remaining rim came from a site in Merigomish Harbour, Nova Scotia on the Northumberland Strait across from Prince Edward Island (the first four specimens are reproduced from Sanger 1987: Figure 7 and the last specimen was drawn by Mr. David W. Laverie)

Changes in projectile point styles are best illustrated at the unbroken 2,500 years of occupation represented at the stratified Oxbow site on the Miramichi River drainage of northeastern New Brunswick (Allen 1981: Figure 1). The earlier stemmed points are simply too thick to be hafted onto a wooden arrowshaft, which, on the basis of ethnographic specimens, are generally around 9 mm in diameter (Wright 1999:582). Some regional variation in projectile point styles also appears to exist relative to the northeastern and southwestern portions of New Brunswick (Rutherford 1991:119). Another regional characteristic is found in Prince Edward Island and northeastern New Brunswick where quartzite was the preferred stone for tool manufacture until Period V when fine-grained cherts, rhyolites and quartz begin to appear in significant quantities (Dr. David Keenlyside, Archaeological Survey of Canada: personal communication). With reference to the procedures involved in quarrying stone and the various processes required in the manufacturing of the finished tools only one detailed study is available for the area under consideration that is pertinent to Period V. This pertains to the Touladi chert stone tool manufacturing sites in the Témiscouta area of Québec situated on the headwaters of the Saint John River (Burke et Chalifoux 1998).

While naturally occurring native copper nuggets were available at Cap d'Or in Nova Scotia there does not appear to have been a developed native copper industry. A couple of native copper awls and nuggets, for example, were all that was included in the massive collections from sites in Marigomish Harbour and Mahone Bay, Nova Scotia (Smith 1929; Wintemberg 1929). Only an occasional piece of beaten native copper appeared during the Shubenacadie River survey in Nova Scotia (Preston 1974a:4 & 12). If there had been a significant local industry one would expect to find evidence of manufacturing debris in the form of hammered nuggets and flakes at the geological source at Cap d'Or. Even the limited copper tools which have been recorded could actually represent trade items from the west.

It is only under exceptional circumstances that a glimpse of the perishable elements of any ancient technology is possible. At the late 16th century Hopps site at Pictou, Nova Scotia, fabrics in Micmac graves were preserved by the copper salts from the large European copper kettles covering the burials (Harper 1956: Appendix B). Fragments of mats and bags were produced using a twined weaving method (Ibid: Figure 21). Bulrushes were also used in the manufacture of matting; sometime stitched. A birch bark bag had been sewn together with spruce root. Other plant species used were reed (*Scirpus lacustris*), cattail (*Typha latifolia*), the inner bask of cedar (*Thuja occidentalis*) and basswood (*Tilia americana*), possible beachgrass (*Amophila brevilingulata*), and the inner bark of some conifer. There were two types of cordage, twisted and braided and two varieties of braiding and sewing, all represented in five bags and one or more mats (Whitehead 1991:250-251). Similar burials from the Northport site included twill-woven cedar bark and twine-woven rush or reed fibres (*Scirpus lacustris* or *Juncus effusus*) (Whitehead 1991:244-246). At Redbank in northeastern New Brunswick a copper kettle burial produced evidence of cedar bast being used in a twill weave. Rarely do more resistant artifacts cast any light on a once flourishing fabric industry. An exception to

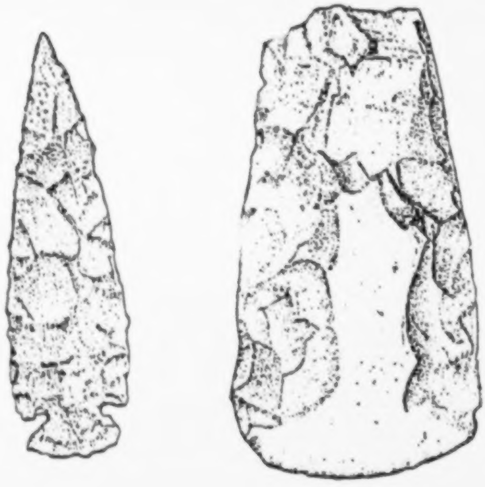


FIGURE 109: MARITIME ALGONQUIAN IMPLEMENTS To the left is a typical corner-notched chipped stone arrowhead and to the right a chipped and ground axe.(Scale variable. Drawn by Mr.David W. Laverie).

the rule are the bone netting or matting needles with one or two central holes (Matthew 1884:23). The foregoing range of plant products produced and the variety of plant fibres used emphasize how poorly the archaeological record can reflect many aspect of an ancient technology. There is no archaeological evidence, for example, of the large tree stumps which were hollowed-out with fire and stone axes for use as cooking cauldrons by the Micmac (Denys 1908:401-402). Indeed, such cooking contrivances could help explain the decreasing importance of pottery vessels. Similarly absent from the archaeological deposits are the naturally spiked and barbed chitin tails of horseshoe crabs (*Limulus polyphemus*) once used as arrow tips in the Gulf of Maine (Whitehead 1991:238-239).

Subsistence:

The importance of the food quest is reflected in the Micmac practice of naming places after the resources to be found there (Whitehead 1991:239). A broadly based subsistence pattern appears to be characteristic of Maritime Algonquian shell midden sites with some evidence of a greater focus on land resources during the winter when certain marine resources would not have been readily available. Both the mobility and portability provided by the bark canoe permitted the exploitation of a very extensive catchment area. People took advantage of a diversity of resources, some of which were 'steady state' and others 'surges', such as moose versus the seasonal fish runs (Burley 1983:171). Stored foods would have been vital to carry people through the winter until the first spring fish runs and the appearance of fiddleheads. There is some evidence that shellfish were harvested in the spring when storage or seasonal foods were limited (Aikens et al.1986:13). No direct evidence of food storage has been identified on the coastal shell midden sites although large storage pits have been recorded part way into the interior at Red Bank, New Brunswick (Allen 1992:16). The aforementioned pits occur on the higher gravel terraces overlooking Red Bank and are 4 to 5 m in diameter and sometimes more than 2 m in depth. Limited physical evidence of food storage is not particularly significant as most ethnographically recorded methods of food storage across Canada would leave little or no archaeological trace. Given the degree of resource variability in the territories occupied by Maritime Algonquians there were numerous "...local expression of a flexible and generalized economic strategy which can be applied anywhere yielding only a different ratio of land/sea foods" (Nash 1986:159). A major regional difference during Period V is the evidence that southern New Brunswick coastal sites were occupied predominantly during the winter (Sanger 1987) while northern Nova Scotia sites were primarily summer occupations (Stewart 1989). Such seasonal variability could help to explain statements in the early historical documents which conflict with the archaeological evidence. The foregoing is not intended to suggest that there was not some degree of year-round occupation at all of these sites but simply to note variations in seasonal intensity of occupation between different regions of the Maritime provinces. Thus, rather than there being a single pre-European Micmac subsistence pattern, for example, the archaeological evidence indicates that "...there were a variety of precontact economies, which varied regionally in accordance with the distribution of resources" (Nash and Miller 1987:41). Put another way, the Micmac had "...a generalized hunting and gathering adaptation whereby no single resource is seen to dominate subsistence pursuits and, hence, restrict settlement pattern mobility" (Burley 1983:158). An ability to respond to a number of complex interrelated conditions was the key to survival. This adaptation likely explains why communities along the east coast did not develop into the socially stratified communities of the West Coast as there was no way a small group of elites could exert sufficient control over specific resource areas thus forcing the degree of sedentariness necessary to produce food surpluses which would, in turn, permit the creation of wealth and with it the establishment of ranked societies.

In the early 17th century, with reference to the Micmac on the Nova Scotia side of the Bay of Fundy, Father Biard described the seasonal subsistence pattern as follows: February/March - beaver, otter, moose, bear, and caribou; March> - smelt, herring, sturgeon, salmon, eggs; May/September - cod, fish, shellfish; mid-September - eels; and December > - tom cod. He also noted the importance of the winter seal hunt (Thwaites 1959:79). While there are some constants spanning the territories of the Maritime Algonquians, such as the timing of the various fish spawning concentrations, there were local deviations from the above historical subsistence rounds which pertained to only one part of Nova Scotia.

One of the most complete faunal analysis of vertebrate remains in the Maritimes comes from the multi-component, Period V, Delorey Island site of Nova Scotia near Cape Breton (Stewart 1986). Not only was the bone refuse analysed in a detailed and innovative manner but extensive use was made of the early historical documentation (Denys 1908; LeClercq 1910; Lescarbot 1907-1914) with consideration of issues such as hunting methods, food processing, and seasonality. Remains consisted mainly of moose, seal, dog, and beaver, in that order. There was little evidence of fish and what did occur represented complete individuals. Birds were also poorly represented. Limited evidence of charring or butchering on bone suggested that most meat was cooked by boiling. There was also little evidence that discarded bones were given to the dogs. In this regard, bone fragments that pass through the digestive system of dogs retain a number of readily recognizable characteristics and their absence would suggest that there existed a taboo concerning the treatment of discarded food bones in order to not offend the spirits of animals involved. With reference to the frequent occurrence of dog bones in the middens it should be noted that, while dogs were important in the hunting of moose and bear and sniffing-out beaver in their lodges, they were also used as a feast animal as an expression of exceptional friendship despite the fact "Their wealth was in proportion to their Dogs..." (Denys 1908:430). Despite abundant evidence of bone splitting to acquire the marrow, evidence of grease production is currently lacking or unrecognized. For example, historical documentation suggests that bones were reduced to powder prior to the grease rendering process, a practice which would have destroyed any archaeological evidence of the activity. The bones of large animals, like moose, are mainly represented by limb bones indicating that most of the carcass was left at the kill/processing site while seals, fish, birds, and most small mammals were brought back intact to the site. Although not what could be called a shell midden site the Delorey Island site did contain sufficient shell to indicate that they represented a seasonally important element in the diet. The shell had, in turn, neutralized the normally acid soils and permitted the preservation of the bone refuse (Nash 1986:103). Oysters (*Crassostrea virginica*) were most important followed by soft shell clam (*Mya arenaria*) and surf or hen clam (*Spisula solidissima*). Of course, there was no archaeological evidence of the undoubtedly exploited lobsters, crabs, squid, and plant materials like roots and fiddleheads.

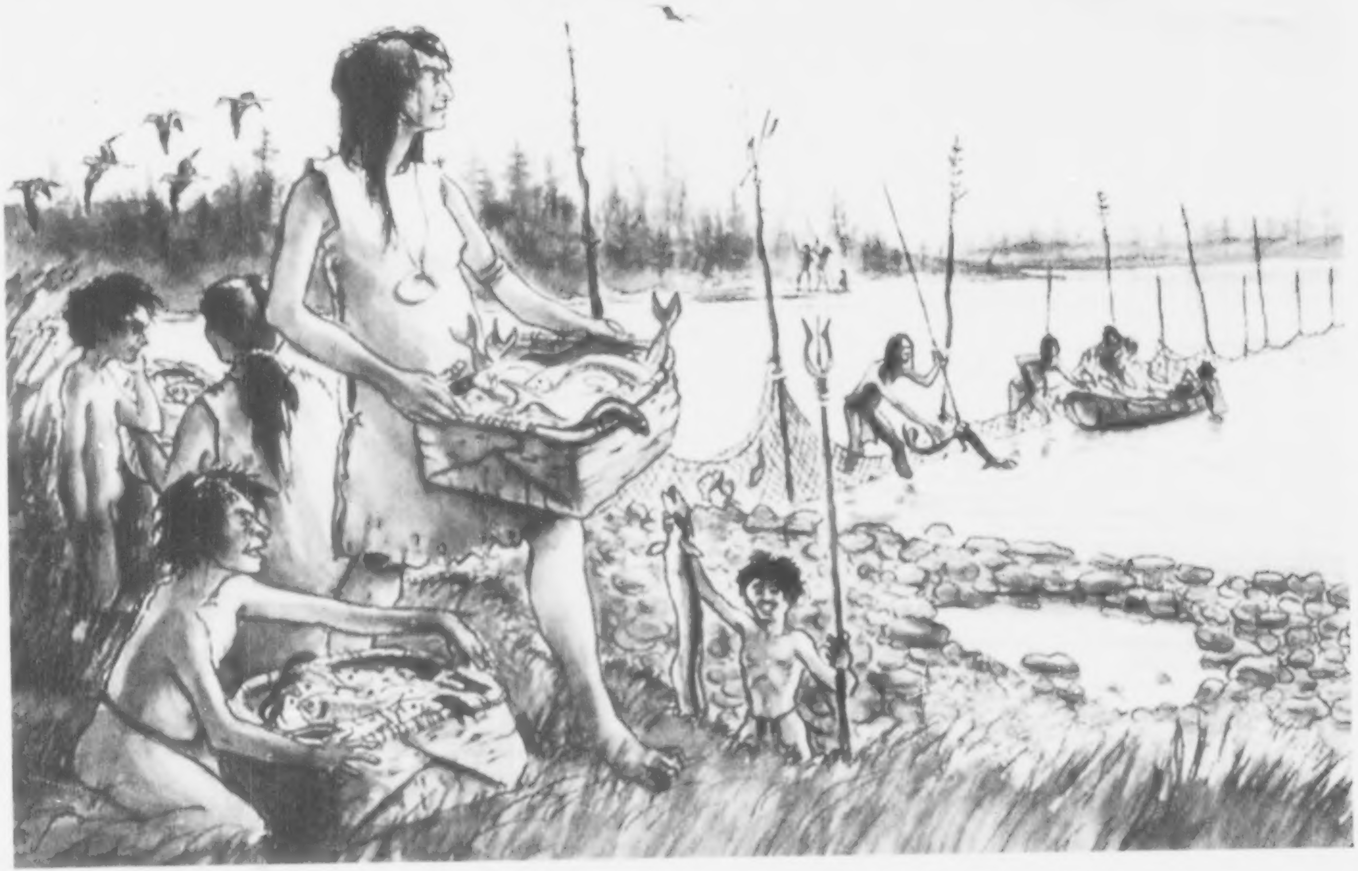
At the Carson site on Passamaquoddy Bay in southeastern New Brunswick (Sanger 1987) faunal remains from the major occupation of around AD 1000 were composed mainly of clams (*Mya arenaria*) and beaver (*Castor canadensis*). With reference to shellfish, however, it should be noted that blue mussels (*Mytilus edulis*) do not preserve well in archaeological deposits (Sanger 1979a:108). Moose (*Alces alces*), caribou (*Rangifer tarandus*), white-tailed deer (*Odocoileus virginianus*), seals and furbearers, waterfowl, and some fish were also present. Included among the less important species were porcupine (*Erethizon dorsatum*), dog (*Canis familiaris*), otter (*Lutra canadensis*), harbour seal (*Phoca vitulina*), hooded seal (*Cystophora cristata*), plus some other terrestrial species including a surprising occurrence of coyote (*Canis latrans*). Such an assemblage of animal remains suggests a late fall through winter occupation. The scarcity of marine species can be attributed to their scarcity during the winter. Due to lower water temperatures during the winter fish tend to move further out from the coast (Sanger 1988:90). The use of 1/4" screens as a field recovery method, however, undoubtedly missed most of the small fish remains, particularly a winter spawning species like tom cod (*Microgadus tomcod*). Grey seal (*Halichoerus gypus*), although not specifically identified at the Carson site, form large gregarious winter colonies which remain in the same breeding locales from January into February and are thus a predictable potential food (Banfield 1974:367-369). When Father Pierre Biard referred to the importance of the winter seal hunt to acquire oil for "a sauce" stored in moose bladders and used throughout the rest of the year (Thwaites 1959:79) he was probably referring to grey seal as harbour seals breed in late summer to early fall. The extent of bone breakage at the Carson site suggested some grease rendering and distributional evidence indicated the sharing of portions of larger animals within the community. It is of interest to note that the most common food animals encountered at the Carson site were similar to those recovered from the Eisenhauer site in Nova Scotia (Wintemberg 1929).

While fish remains tend to be scarce in the shell midden sites of the Maritime provinces there is considerable variability in species represented. Some sites produce cod fish (*Gadus morhua*), indicative of offshore line fishing, while others are characterized by the presence of flounders and sculpins, suggesting the use of weirs on intertidal mud flats (Sanger 1982:202). Even from contemporary winter coastal sites the frequencies of fish remains can be quite variable. Passamaquoddy Bay sites, for example, usually contain less than 15% fish remains. This is in contrast to an equivalent figure of more than 80% for sites on the central coast of Maine at Penobscot Bay. Just as the importance of the use of deadfalls and snares in the capture of land animals cannot be evaluated archaeologically, the same holds for the use of intertidal and riverine fish weirs. All of these capturing methods were documented by early chroniclers as being important. As a general observation it can be stated that food animals represented on sites could vary extensively by both region, time of the year, and whether the setting was on off-shore or inshore islands or the mainland (Sanger 1995: Figs.5a & 5b). There is evidence, however, of a heavy exploitation of a wide range of intertidal resources (Black 1988:21-22). It is virtually a certainty that the use of increasingly sophisticated archaeological recovery methods, such as flotation in place of the 1/4" screen, will reveal that fish were far more important to subsistence than would currently appear to be the case reflected in the faunal recoveries.

Evidence of intertidal weirs would be destroyed by rising sea levels, high tidal amplitudes, and the effects of onshore winter storms whereas river and stream weirs, situated at a narrows with shallow, fast water, and a cobble-boulder floor, would be flushed away by spring runoffs. An exception to the foregoing are the wooden stake fish weirs on Sebasticool Lake in central Maine (Petersen et al. 1994). Although the former site is dated to Period IV, such structures would also have been in use during Period V in both the interior and along the coast.

Maritime Algonquian culture interior sites, small or large, are relatively few in number. In part, this is understandable. No part of the Nova Scotia interior, for example, is more than 60 km from the coast. Most so-called interior sites, like the Oxbow site at Red Bank, New Brunswick (Allen 1992) are actually only a very short distance from saltwater estuaries at the head of tide. The latter sites are situated at places along rivers that would have been favourable for fishing during the spawning runs of Atlantic sturgeon (*Acipenser oxyrhynchus*), Atlantic salmon (*Salmo salar*), smelt (*Osmerus mordax*), gaspereau (*Alosa pseudoharengus*), shad (*Alosa sapidissima*), and striped bass (*Morone saxatilis*) from spring throughout the summer, American eel (*Anguilla rostrata*) in the fall, and tomcod (*Microgadus tomcod*) in the winter. One truly interior site area which has been extensively investigated is the Témiscouta region on the headwaters of the Saint John River in Québec less than 50 km southeast of the St.Lawrence River (Chalifoux et al. 1998). The outcrops of high quality chert on Grand Lac Touladi were obviously a major attraction to the region, as indicated by the massive quantities of chipping detritus, broken preforms, and other workshop debris. On the basis of the artifactual remains the dominant exploitation of the region during Period V pertained to the Maritime Algonquian although there is also evidence of penetration into the area by St.Lawrence Iroquois people from the St.Lawrence River Valley. Presumably the game and fish resources of the area were also an attraction although it is certain that the chert deposits were the major magnet for human activity. How far this distinctive high quality chert was distributed along the Saint John River and probably to the coast is yet to be determined by the appropriate petrographic and chemical analyses.

Plant use by Martime Algonquians has been frequently documented in the early European records but, for understandable reasons, is not well documented in the archaeological record. Fiddleheads, the unopened frond of the ostrich fern (*Matteuccia struthiopteris*), were the earliest spring green being available for a few weeks around the beginning of May. With reference to the Maliseet at Tobique it is recorded that "fiddleheads, together with pancakes, fish, caribou, and moose, were the chief foods recalled by old people from their childhood days" (Wallis and Wallis 1957:17). In addition to the problem of preservation of plant materials in archaeological deposits there is also



COLOUR PLATE XX: AN INTERTIDAL FISH WEIR This reconstruction of a fish weir in a saltwater estuary involves a weir strung across a narrow channel to exploit the two-way tidal flow where fish would be funnelled towards nets and traps and native spears. In this instance, adult America eels (*Anguilla rostrata*) are being captured as they leave their freshwater homes for the sea in order to spawn. Submerging shorelines, tidal and onshore winter storm forces would destroy all evidence of such weirs (Reproduced from Keenlyside 1984: Plate 26; colour print provided by Dr. David L. Keenlyside, Archaeological Survey of Canada, Canadian Museum of Civilization).

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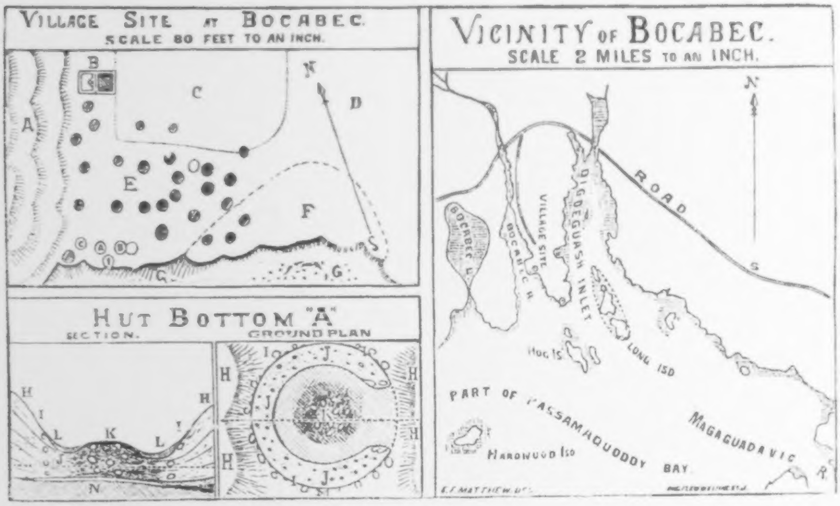
the problem that appropriate archaeological recovery methods, such as flotation, are still not widely used in the region. Flotation involves the floating of carbonised fragments of plant materials out archaeological dirt. The process of accidental carbonisation during plant food preparation and preserving permits even microscopic items, like blue berry and tobacco seeds, to survive and be available for identification. One has to move far to the south into southern New England to find records of plant domesticates like corn. A few instances of plant recoveries from archaeological deposits, however, do exist. On the Gaspé coast at the AD 700 Cap-Chat site (Barré 1975) pin cherry (*Prunus pennsylvanica*) was common followed by raspberry (*Rubus idaeus*), elderberry (*Sambucus pubens*), and choke cherry (*Prunus virginiana*) (Ibid: Fig.11). These remains suggested an August occupation. Only butternut shell fragments (*Juglans sp.*) were recorded at the Fulton Island site on the Saint John River (Foulkes n.d.). At the Mud Lake Stream site in the interior of New Brunswick elderberry, smartweed, and raspberry were common with lesser numbers of pin cherry, sarsaparilla (*Aralia sp.*), sedge, etc. (Deal et al.1991: Table 8.1). Flotation of archaeological samples was applied at the Melanson site on the Minas Basin of the Bay of Fundy in Nova Scotia. Situated on the Gaspereau River above the head of tide, an abundance of plant materials were indicative of a summer to fall occupation (Nash et al. 1991:226). Nine samples, taken from four pit features, produced mainly *Rubus* (raspberry/blackberry), *Sambucus canadensis* (elderberry), with one feature producing a large concentration of *Rhus typhina* (staghorn sumac) (Deal 1990: Table 10). Staghorn sumac was widely used across North America as an ingredient in medicine (Moerman 1986). Minor items were as follows: pin cherry (*Prunus pennsylvanica*); wood sorrel (*Oxalis stricta*); lambs quarters (*Chenopodium album*); chickweed (*Stellaria sp.*); arrow vine (*Polygonum sagittatum*); smartweed (*Polygonum hydropiper* and *natans*); sedge (*Carex sp.*); arrow wood e.g. highbush cranberry (*Viburnum sp.*): and dirch grass (*Ruppia maritima*). There were also some examples of the grass, buckwheat, mint, and rose families as well as hemlock (*Tsuga canadensis*) and balsam fir (*Abies balsamea*) needles and buds. Seeds such as barnyard grass (*Echinochloa crusgali*), an introduced species, warned of some contamination by European plants.

Settlement patterns:

Maritime Algonquian settlement patterns can be organized into four major categories; coastal mainland, offshore islands, inland riverine above the head of tide, and well into the interior. With few exceptions, sites in all of the foregoing categories are small and contain shallow deposits with considerable component mixture resulting from repetitive seasonal occupations. As always there are exceptions to the general rule, such as the 0.8 hectare Teacher's Cove site in Passamaquoddy Bay (Davis 1978:9). The greatest concentrations of archaeological sites are in the estuaries and lagoon estuary settings or where a number of small rivers enter the sea; all areas rich in anadromous fish, clam beds, and possessing conditions favouring ease of water access and landing. Interior sites tend to be situated at rapids, waterfalls, and lake outlets where spawning fish runs would be concentrated. Such waterway transportation routes would have been used for both the hunt and the collecting of other necessary materials such as stone for manufacturing tools, spruce gum and roots, plant foods, birch bark for canoes, lodges, and containers. The suggestion that during Period V an increase in the numbers of archaeological sites is indicative of an increase in population (Sanger 1979a:99) could also be the result of an increasing coalescence of formerly more dispersed people into certain locales. Site destruction of earlier sites by rising sea levels could also lead to a false impression of significant increases in populations.

A once popular opinion that Martime Algonquian settlement consisted of occupation on the coast during the summer and movement to the interior for the winter (Bock 1966:3; Snow 1980; Speck 1940), based largely upon early but limited historical documentation and recent ethnological studies, has been corrected by the archaeological evidence for winter and year-round occupation on the coast (Sanger 1996). Paradoxically, archaeological evidence was used more than a century ago to correct the error of seasonal settlement pattern suggested by the historical documents. At the Bocabec site on Passamaquoddy Bay it was observed that "There are, however, indications that the occupation of the village sites marked by these shell-heaps was more or less continuous" (Matthews 1884:25). This insightful, early archaeological conclusion was premised upon the fact that the cultural debris was concentrated within the pit houses, suggesting cold weather occupations; a proposition further supported by the natural protection from the elements provided by site locations. Another proposal, suggesting that there were coastal-adapted and interior-adapted populations (Sanger 1996), while possibly of utility in southern Maine, is currently premised upon too scanty a data base from the northern interior sites. It is more probable, given the mobility provided by canoe travel, that interior resources, including spawning fish, were exploited during the summer by segments of the year-round coastal populations or, indeed, the entire community could have temporarily abandoned their coastal settlements for the seasonal riverine fish runs.


VILLAGE SITE AT BOCABEC.
SCALE 80 FEET TO AN INCH.
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BOCABEC R.
BOCABEC R.
HOG IS
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PART OF PASSAMAQUODDY BAY
MAGAGUADAVIC
HARDWOOD ISD
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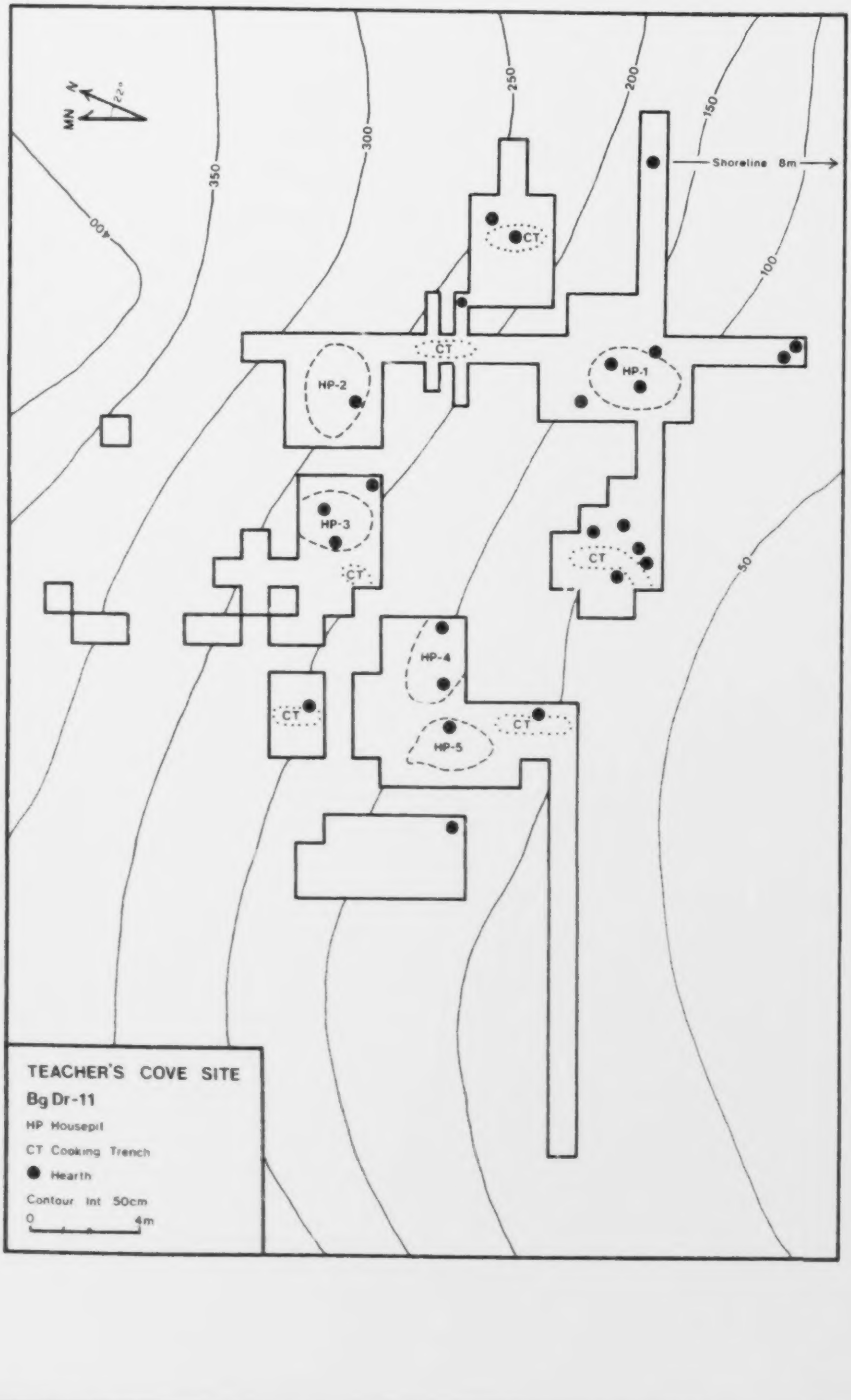
FIGURE 110: THE BOCABEC SITE PLAN WITH A FLOOR PLAN AND CROS-SECTION OF A TYPICAL PIT HOUSE Excavated and reported upon in the late 19th century in an article which can only be described as an exceptional piece of scholarship, the archaeological findings at the Bocabec site in Passamaquoddy Bay first questioned the validity of early historical documents and recent ethnological studies suggesting Maritime Algonquian people spent the summer on the coast and moved into the interior for the winter. Concentration of cultural debris around the dwelling hearths indicated cold weather occupations as did the protected location of the site. The site once contained an estimated 75 semisubterranean dwellings (Reproduced from Matthew 1884:8-9).

The overwhelming body of information on settlement patterns come from coastal or near coastal sites. Passamaquoddy Bay on the northern side of the Bay of Fundy, New Brunswick, with its exceptionally rich marine resources and concentration of archaeological sites, represents the most intensively investigated region of all of the Maritime provinces during Period V. Certain criteria for favoured site locations characterize many of the coastal mainland shell midden sites, such as the Carson site on Passamaquoddy Bay (Sanger 1987). These criteria are as follows: access to a dependable supply of fresh water; a good canoe landing beach; a south to southeastern orientation for maximum exposure to the sun as well as protection from winter winds; and set in a locale with abundant natural resources including clam flats. Typically, such sites consist of shallow archaeological deposits with no apparent stratigraphy. Features are generally represented by steaming ovens of fire cracked stone for cooking shellfish and other foods and chipping detritus floors marking areas of stone tool manufacture. The Carson site is typical of the mainland Passamaquoddy sites in that it appears to have been basically a seasonal winter settlement with at least a portion of the summer settlement taking place on the coastal islands. While the earliest occupation of the site is tentatively suggested to pertain to Period III (4,000-1,000 BC) the projectile point styles involved also resemble some of the Late Maritime culture points of Period IV (1,000 BC-AD 500) (Allen 1980). The major occupation dates to approximately AD 1000 and there is also a later occupation represented by some European trade items. The pattern of seasonal, *concentrated* occupation on the coast appears to have remained unchanged from Period IV throughout Period V. Any settlement pattern inferences in the region, however, must be cognisant of the distorting effect of differential erosion influenced by exposure to onshore winter storms, elevation above sea level, and the nature of the bedrock substrata (Sanger 1987:7). Further to the north, at Merigomish Harbour in Nova Scotia on the Northumberland Strait, the majority of the eighteen shell midden sites recorded were situated on small bays within the protection of the main harbour, facing south or east and near clam beds (Smith 1929: Fig.1). The Brown site on the Atlantic coast near Halifax, likely a warm weather site consisting of a number of seasonal occupations, occupied 150 m^2 within a central area cleared of boulders with garbage being deposited around the boulder strewn periphery (Sheldon 1991). The northernmost Maritime Algonquian site is the Chap-Chat site on the coast of the Gaspé Peninsula of Québec (Barré 1975). Dated to AD 700-800, the archaeological deposits of this stratified site had been partially reworked by high tides. Hearths composed of fire fractured rock and a storage pit were recorded. Plant remains, recovered by the method of floating microscopic carbonised remains from the archaeological soils, indicated a late summer occupation. The site is situated at the mouth of a river at the foot of a terrace and faces north onto the Gulf of St.Lawrence. The Rivière du Cap-Chat was a historically documented important canoe route across the Gaspé Peninsula to the Bay of Chaleur on the Atlantic (Ibid:9). Period V sites along the Gaspé coast tend to be few in number, occur along the lower beaches, and "...leurs vestiges sont sembables à ceux de Cap-Chat..." (Benmouyal 1987:380). In Cape Breton, Nova Scotia, there is an apparent absence of Period V sites along the northern coast and interior of the Island. In fact, settlement evidence is sparse, being limited in large part to Bras d'Or Lake, a large salt water embayment, and along the southwestern coast (Nash 1978:142). On Prince Edward Island, lagoon/estuary settings along the south side and eastern end of the Island were favoured settlement areas; locations that would have provided some protection to sites from erosion (Keenlyside 1980: Fig.1). The presence of seal bones from such sites suggest winter to early spring occupations (Keenlyside 1983).

A possible semisubterranean dwelling on the highest terrace of the Carson site had been dug 50 to 60 cm into the ground. A central, rock-lined pit hearth, 1.25 m in diameter and 20 cm deep, was surrounded by midden debris containing few shells but high concentrations of artifacts, particularly beaver incisor knives and chisels, end scrapers, and bifacially flaked stone knives. Both the favourable cold weather location of the site and the concentration of cultural debris within at least one dwelling suggested a winter occupation (fall to spring) which was supported by other lines of evidence, such as the presence of the remains of certain seasonal bird species and beaver tooth eruptions typical of winter dentition. The abundance of beaver, with they high fat content, would have represented an important winter food. On the other hand, a high frequency of beaver incisor knives could well reflect the curation of such important tools and not necessarily the number of beaver captured during any single season. A scarcity of fish remains also points to winter settlement as marine fish tend to move into deeper water as water temperatures drop (Sanger 1987:72). A reasonable explanation for the large numbers of contemporary sites in Passamaquoddy Bay is that the depletion of clam beds and local mammal populations would have necessitate the periodic abandonment of favoured site locations (Ibid:83). Most finished tools at the Carson site were manufactured from exotic stone but none of which could be associated with specific geological deposits although Lac Toudali chert on the headwaters of the Saint John River is certainly a possible source.

In contrast to the Carson site, at the Teacher's Cove site, also in Passamaquoddy Bay, a number of dwellings were identified (Davis 1978). The five semisubterranean structures in question measured approximately 3 by 2 m with hearths tending to be located along the edge of the house rather than centrally (Figure 111). Some evidence of peripheral house pit weight stones was encountered but few post moulds. On the other hand, dwelling edges were banked with shells which could have reduced the need for weight stones or dug in posts to hold the dwelling cover in place. Most debris, including manufacturing debris, was concentrated inside of the houses around the hearth floors. Single family dwellings of the nearby Minister's Island site were more variable than the foregoing with dimensions which ranged from 2 by 1.5 m to 4.5 by 2 m (Sanger 1987: Fig.12). At least two of these houses dated to AD 800. Regardless of variability in outline and dimensions, dwellings tend to be situated toward the inland portion of sites. When the location of an entrance way can be determined it usually faced away from the sea. While the archaeological evidence would suggest that these single family dwellings were quite simple affairs the documentary evidence indicates otherwise. These descriptions note that dwellings had an interior bark liner as well as the birch bark outer covering. Such a structural arrangement, with dead airspace or moss between the two layers of bark, would provided effective insulation. It is also recorded that the apex of the conical support posts was not central but nearer the entrance way, resulting in a steep entrance configuration to the dwelling with the hearth generally being located close to the entrance. Such an arrangement would have permitted considerable free floor space back of the hearth for sleeping and other activities (Sanger 1976:13).


MN
N
22°
400
350
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250
200
150
100
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Shoreline 8m
CT
HP-1
HP-2
HP-3
HP-4
HP-5
TEACHER'S COVE SITE
Bg Dr-11
HP Housepit
CT Cooking Trench
● Hearth
Contour Int 50cm
0
4m

FIGURE 111: SEMI-SUBTERRANEAN DWELLINGS, TEACHER'S COVE SITE Situated in Passamaquoddy Bay, New Brunswick, the ovate shaped pit houses at this site were relatively consistent in outline. The cooking trenches indicate that certain activities did take place outside. These oval pits, measuring from 2 to 3 m by 1.5 to 2.5 m and from 10 to 30 cm in depth, were lined with stones covered with charcoal stained gravel and sand containing unbroken clam shells and have been interpreted as clam steaming pits (Davis 1978:14). (Reproduced from Sanger 1987: Figure 11)

Dwellings at the Sand Point site, again in Passamaquoddy Bay, which were from 3.5 to 4.0 m long and 10 to 60 cm deep, possessed an elevated bench around the hearth situated towards the entrance end of the dwelling (Sanger 1979a:107) matching the preceding documented description. There is clear archaeological evidence that such dwellings were seasonally re-occupied, with cleaning of the floors and the spreading of fresh gravel and sand as floor coverings. Abandoned house pits would eventually be used as convenient dump areas. Debris concentrated around hearths at the Point-à-Tom site and other sites in the Tracadie area of New Brunswick, just south of Chaleur Bay, suggested possible dwellings around 2.5 m in diameter (Keenlyside et Keenlyside 1976: Planche 13). Early 17th century descriptions of Micmac houses by Father Pierre Biard (Thwaites 1959:77) note the existence of both winter and summer houses; the former resembling the archaeologically recorded dwellings while the latter were "...broad and long, that they may have more air; then they nearly always cover them with bark, or mats made of tender reeds...". In 1604 Samuel de Champlain described a village at the mouth of the Saint John River consisting of single to several family sized dwellings as well as a council lodge that was able to accommodate 80 to 100 people (Erickson 1978:123).

One of the few published reports relevant to the offshore islands is the occupation of the Bliss Islands at the northern entrance to Passamaquoddy Bay (Black 1988). The series of seasonal occupations pertain mainly to Periods IV and V but there is also evidence of an occupation at the Period II/III interface in the form of a ground slate ulu recovered by a scallop dragger off White Horse Island. This specimen would date around 6,000 years ago and relate to a period when water levels were much lower than today (Ibid:79). While such offshore sites are generally attributed to summer occupations (Sanger 1987) occurrences in the faunal remains of sea urchins suggests at least some cold weather exploitation.

An exceptionally large base camp above the head of tide on the Gaspereau River in Nova Scotia, 10 km from the Minas Basin of the Bay of Fundy , is the 24.3 hectare Melanson site (Nash and Stewart 1990). Occupied over the last 2,000 years, the site was situated in an ideal locale for exploiting the spring run of gaspereau, also know as alewife (*Alosa pseudoharengus*), and was also close to the high quality chert deposits at

Parrsboro. At the cosmological level the site is also near Cape Blomidon on North Mountain, the home attributed by the Micmac to the culture hero/transformer Glooscap. Over the expanse of the site a number of temporally distinct subareas could be identified on the basis of their artifact content. Similarly at the stratified Oxbow site, on the Little Southwest Miramichi River at its embouchure into the Northwest Miramichi River in New Brunswick, an unbroken record of occupation, beginning 2,500 years ago, has been documented (Allen 1981; 1992). Even though bone preservation was poor to nonexistent it can be inferred that the rich seasonal fish runs would account for the presence of both the Oxbow site and other numerous sites in the area. A unique phenomena is sixty large pits, from 4 to 5 m in diameter and as deep as 2 m, which have been interpreted as storage pits (Allen 1992:16), not unlike more recent cold storage cellars in both function and form. The dimensions of these structures would indicate that a considerable quantity of food was put down for the winter and that a substantial population was involved. A similar site to the Oxbow site is the Fulton Island site on the Saint John River near Grand Lake, which was also stratified and occupied mainly during Period IV and V (Foulkes n.d.). In the same area as this site there is the curious situation whereby at the large Princess Park site on Grand Lake there appears to be an absence of Period V occupations even though the Period IV occupations were substantial (McIntosh 1909). Obviously some unknown factor or factors in the interim between Period IV and Period V drastically altered the attractiveness of this particular site location.

What could be described as deep interior sites are quite rare. This is understandable in Prince Edward Island and Nova Scotia, with their small rivers and interiors at no significant distance from the coast. In the interior proper, archaeological survey of a section of the upper reaches of the Saint John River at the boundary between New Brunswick and Maine, revealed numerous very small campsites. Although the region had been heavily disturbed by lumbering activities, dam construction, and erosion, it was concluded that the "...area served primarily as a travel route, and not as a place for long term residence based on a stable local resource" (Sanger 1979:90). The Saint John River was the major travel route to the St.Lawrence River and interconnected through a series of lakes and waterways with the Kennebec and Penobscot rivers in Maine. Archaeological evidence from Moosehead Lake in northwestern Maine suggests, on the basis of projectile point styles, that during Period V interior contacts were with Penobscot Bay on the central Maine coast, Passamaquoddy Bay, and the Saint John River in southern New Brunswick (Hamilton et al. 1984:10). Sites are characterized by an abundance of small end scrapers but very little in the way of pottery vessels. Most sites are small camps, averaging 20 m in length and occupying rich fishing areas. At Spednic Lake, on the St.Croix River drainage forming the boundary between New Brunswick and Maine, evidence of Period V occupation was sparse consisting of a couple of base camps and a scattering of transitory camps (Deal et al. 1991:180). In one of the few undisturbed areas along the Shubenacadie River in Nova Scotia small, multicomponent fishing stations were identified. Most camps were from 9 to 14 m in diameter but could be as large as 55 by 27 m (Preston 1974a). Situated beside shallow, fast water and rapids, such camps were likely once associated with fish weirs which would have been destroyed each year with the spring runoff. Another interior site in the Maritime provinces is the Six Mile Brook site located 30 km inland by water. Situated on a tributary of the Southwest Miramichi River in northeastern New Brunswick, this stratified site contained occupations ranging from Period III into Period V (Allen 1988:10-13). For most of the northern Maritime provinces, however, interior sites are either absent or scarce (Nash and Miller 1987:47).

The most effective archaeological method available to demonstrate the travels of past peoples and their relationships with one another is through the association of exotic materials, mainly stone suitable for fashioning tools, with their geological sources. More often than not such identifications are done on a judgmental basis whereby the archaeologist thinks on the grounds of a cursory examination that the stone from which a tool was manufactured or a flake came from a particular geological source he/she is familiar with. A far more objective and trustworthy procedure and one that reduces the amount of erroneous information being inserted into the archaeological literature is what is called "finger-printing" archaeological materials to geological sources. This is usually done by the microscopic examination of the thin sectioned slices of the stone in question called petrographic analysis and chemical analysis using methods like neutron activation analysis and X-ray fluorescence whereby the chemical constituents of the stone are identified and quantified. The application of both methods, petrographic and chemical, represents the ideal but is not always practical given the technical requirements. In this procedure, of course, samples must be taken from both the archaeological specimen and the inferred geological source.

In Penobscot Bay, on the central coast of Maine, the use of exotic cherts at the stratified Turner Farm site increased after AD 1000 (Bourque 1994). Over 20% of the scrapers from the site were manufactured from cherts obtained from Munsungan Lake in northwestern Maine, the State of New York, and Parrsboro on the Minas Basin of Nova Scotia (Ibid:180). It has even been speculated that the trade in Parrsboro chert was tightly controlled by the local Maritime Algonquian bands (Nash and Stewart 1990:206). This latter high quality and colourful chert was exploited by people from Palaeo-Indian times until stone tool manufacturing was abandoned with the advent of European metals. The occurrence of other Nova Scotia cherts on Period V sites along the central Maine coast suggest direct contact with the Yarmouth area of Nova Scotia; a 160 km canoe trip over open water (Sanger and Davis 1991:67 & 77). Ramah quartzite from the northern coast of Labrador frequently appears on late Period V sites as a minor element, although it is cautioned that most identifications so far appear to be judgmental. Such occurrences have been reported from the AD 800 Brown site on the Atlantic coast of Nova Scotia (Sheldon 1991) but here the much closer Parrsboro cherts of the Minas Basin represented 72% of the finished tools. There is also evidence at this site that the chert was brought from the quarry source in chunks to be fashioned later into tools at the site. Ramah quartzite has also been identified at the Cap-Chat site on the Gaspé coast (Barré 1975), from Bras d'Or Lake sites on the southern coast of Cape Breton, Nova Scotia (Nash 1978:140), the Melanson site near the Minas Basin in Nova Scotia (Nash and Stewart 1990:200), and was particularly abundant at the Point-á-Tom site in Tracadie Bay, New Brunswick (Keenlyside et Keenlyside 1976), the latter site representing a straight line distance from archaeological site to geological source of 1,200 km. Major geological sources of high quality rhyolite are to be found at Moosehead Lake in the northwestern interior of Maine. In fact, the combination of the existence of a valuable resource material for stone age people and the Lake's location along a major water transportation route, were likely significant factors in the seasonal occupation of the region. As already noted, the existence of exotic materials can be informative regarding the seasonal rounds of people as well as their trading relations with neighbouring groups. The uppermost deposit of the Wakelin site on Prince Edward Island, for example, is characterized by projectile points and scrapers manufactured from both local quartzite and a quartz variety acquired from the east coast of New Brunswick (Keenlyside 1980:76). Certain attributes of the pottery also reinforced this relationship between Prince Edward Island and New Brunswick. Local native copper deposits at Cap d'Or in Nova Scotia do not appear to have been extensively exploited. While an occasional copper awl will appear or some flattened nuggets, there is no significant evidence of the workshop debris so characteristic of sites close to the copper deposits on Lake Superior.

By far the most detailed description of a stone quarry and workshop situation comes from the Temíscouta region on the headwaters of the Saint John River in Québec (Chalifoux et Burke 1995; Chalifoux et al. 1998). There is also a detailed description of the processes involved in transforming the raw chert into finished tools (Burke et Chalifoux 1998). The Saint John River acted as an exceptional waterway in eastern North America. With its headwaters situated only 50 km southeast of the St.Lawrence River there was not only ready access to the latter waterway into the interior of the Continent but also to other river connections with the St.Lawrence River along the north shore, such as the Saugenay River with its access to the interior of the Canadian Shield in Québec. The St.John River not only empties into the Bay of Fundy but, through a system of interconnecting tributaries and lakes in its upper reaches, it also provided access to the Kennebec and Penobscot rivers in Maine. Typical Period V Maritime Algonquian corner-notched arrowheads and pottery, including shell tempered pottery, have been reported from the Témiscouta region as has St.Lawrence Iroquois materials from the St.Lawrence River (Chalifoux et Burke 1995: Figs. 6 and 7). Neutron activation study of some of the St.Lawrence Iroquois pottery indicated the likelihood that the vessels came from the Québec City area (Chapdelaine et Kennedy 1990:77). Occupational evidence ranges from the Archaic of Period III up to the time of European contact. Wide ranging contacts are not only reflected in the distinctive cultural materials but also in the form of exotic stone. Among those recorded are Mistassini-Albanel quartzite from northern Québec, Ramah quartzite from northern Labrador, rhyolites from the Tobique River in New Brunswick and Mount Kineo and Penobscot Bay in Maine, cherts from Munsungun Lake in northeastern Maine, from the Bay of Fundy in Nova Scotia, and Onondaga chert from the juncture of lakes Ontario and Erie (Chalifoux et Burke 1995: Tableau 2). Many of the initial judgmental identifications were supported by X-ray fluorescence analysis as well as macroscopic examination (Ibid.249). Curiously, most of the exotics in the Témiscouta region occurred as scrapers; a tool more often associated with female hide preparation as opposed to male tasks. On the other hand, scrapers were likely multi-task tools thus weakening any one-to-one gender association. The multicomponent Davidson site, a major site situated on the east side of Lake Témiscouta near the embouchure of the Touladi River with its local chert deposits on Grand lac Touladi and Petit lac Touladi (Ibid: Fig.6.49), contained few features, such as pits and hearths, but abundant evidence of the working of the locally available chert. For example, of the worked stone from the site 671 items could be classified as tools in contrast to the remaining 16,962 items consisting of workshop debris and rejects which constituted 97% of the total sample (Chalifoux et Burke 1995: Tableau 3). In addition the majority of the chipped stone tools from the area clearly relate most closely to Maritime Algonquian culture and "L'analyse de la poterie du Témiscouta nous permet d'envisager des affinités eutant avec le séquence céramique définie pour les Maritimes qu'avec celle qué a été établie pour la vallée du Saint-Laurent" (Ibid:258). A study of the large numbers of Carson site end scrapers and other chipped tools manufactured from an exotic chert of unknown source on Passamaquoddy Bay, New Brunswick (Sanger 1987) by someone familiar with the Touladi chert from Québec could possibly reveal that many specimens may have originated from this source. The research carried out in the Lac Témiscouta region demonstrates the anthropological interpretative value of the finger-printing of exotic lithics and, in general, the study of quarry sites which, because of their essential resource, acted as magnets to draw people into specific locales, in many instances, for thousands of years

Cosmology:

Acid soils across the Maritime provinces and the Gaspé Peninsula of Québec have insured that most evidence of burial practices has been obliterated by the passage of time. This is particularly so as it appears that imperishable grave offerings were not placed with the deceased nor were bodies interred in the acid-neutralizing shell middens. Late 16th and early 17th century Micmac graves, however, have been accidentally encountered. Abundantly provided with offerings of both native and European manufacture, the graves are often covered with large copper kettles. Copper salts from the kettles inhibited the normal processes of decay and even organic materials, such as fabrics, have been preserved. At the Hopps site near Pictou, Nova Scotia, one grave had its floor paved with branches which were then covered with a layer of birch bark which extended part way up the side of the grave pit. Five layers of animal pelts, skin side up and painted red, had a copper kettle inverted over them as well as an organic layer containing human bone and a range of grave offerings. Moose and bear hides were then used to cover the kettle. Fill was added and the whole covered with a birch bark sheet which met the margins of the bark layer extending up the sides of the grave. An adjoining grave had a portion of the floor covered with bark and skins. The copper kettles had been "killed". The practice of purposefully breaking or punching a hole in grave offerings represents a good indication of animistic beliefs whereby everything, animate and inanimate, has a soul and the snapping or perforating an offering was to permit the spirit of the offering to accompany that of the deceased. A detailed description of these early graves containing European objects can be found in Harper (1956) and Whitehead (1991). Whitehead's article also provides a summary of the historically documented elaborate treatment of the deceased by the Micmac as recorded by the French. It would appear that the situation with the Micmac was similar to that of the Huron of Ontario and other Iroquoian groups where, in pre-European times, offerings which would survive in the archaeological record were not placed with the deceased. When European trade items became available, however, they were lavished on the deceased. This phenomena may relate to the dramatic changes and concomitant cultural instability initiated by the appearance of the Europeans and their highly contagious diseases. As a eminently rational explanation for the abundance of European objects in the graves I recall reading a long forgotten reference where a French priest was reprimanding a Micmac for the disposal of such valuable goods in the grave and the priest being told that the reason was that European goods were not available in the Micmac Heaven and, therefore, it was necessary to place them in the grave for the use of their deceased kinsmen.

A dog burial was found in the AD 800 level of the stratified Weir site in the Bliss Islands group on the outer margin of Passamaquoddy Bay, New Brunswick (Black 1988:14 & 17). Evidence of butchering was absent and it is questioned whether the dog actually represented a burial or was simply a carcass accidentally preserved by the surrounding shell. The fact that the dog was complete and articulated suggests that it was buried and thus protected from scavengers who would have otherwise scattered the remains. At the Brown site near Halifax, Nova Scotia there was a definite preference for yellow to red exotic quartzite over the local white and grey quartzite (Sheldon n.d.:113). Red obviously held important symbolic meaning for the Micmac as suggested by the painted hide coverings in the 17th century Micmac grave. Although petroglyph sites are known from southern Maine (Snow 1980) there is, as yet, no convincing evidence of their pre-European occurrence in the Maritime provinces (Ganong 1903) or the Gaspé Peninsula. As an interesting aside, the famous Peterborough petroglyphs in Southern Ontario (Vastokas and Vastokas 1973) do not particularly resemble the pictographs or rock paintings of the Canadian Shield (Dewdney and Kidd 1962) but, rather, are more similar to those of southern New England. This curious situation may be explained by a 1680 French map of the Great Lakes and upper St.Lawrence River where it is noted that north of Lake Ontario "Les sauvages Loups et Iroquois tiené d'icy le plus grande partie du castor qu'ils portent aux Anglais et aux Hollandais" (Carte d'une grande partie du Canada 1680). The French term "Loups" or Wolves was generally applied to the Abenaki, who at the time of European activity in eastern North America included, among others, the groups subsumed here under the term Maritime Algonquians. Thus, the Peterborough petroglyphs, rather than being as ancient as many have claimed, may relate to a late 17th century Abenaki sacred site. Possibly pertinent to the foregoing speculation is the fact that two petroglyph sites have been recorded in extreme southeastern Québec (Arsenault et Gagnon 1998). In this same article, it is noted that at least one of these petroglyph sites can be associated with the time of European contact (Ibid: Note 3, 232).

Gluskap was the Trickster-Transformer of the Eastern Algonquians, like the Micmac, and there are numerous stories relating his adventures and accomplishments. There was no formalized consideration of him, however, as a creation figure who had to be worshipped. His feats were transformed into stories of explanation on how the natural state of the native world came about. On another matter, unlike the Central Algonquians to the west, there is no evidence of formal adolescent ritual rights of passage into adulthood, such as the importance of acquiring a guardian spirit. Nor is there any records of conjuring rituals, such as the Shaking Tent (Bock 1966: Table 1).

External relationships:

As could be anticipated with a seafaring people strategically situated along the Atlantic coast adjacent to major drainage systems into the interior, such as the St.Lawrence and Saint John rivers, evidence of contacts with other cultures involves an exceptionally large area. Mobility on the high seas and the seamanship documented for the Micmac in the 16th and 17th centuries (Martijn 1986a; Whitehead 1986) reflect travel capabilities which would have existed in pre-European times. Historically documented early 17th century alliances of the Micmac with the Montagnais on the north shore of the Gulf of St.Lawrence, as well as the Algonkins further upriver, and an early 16th century enmity with the St.Lawrence Iroquois and possibly even the Inuit of the Strait of Belle Isle, reflect pre-European alliances and warfare, although these conflicts were likely heightened by the lure of European trade goods. Initially resource competition, at least with the St.Lawrence Iroquois, was the most likely cause of a conflict which then deteriorated into the endless sequence of reciprocal blood revenge.

The earliest evidence of European contacts relates to the Norse explorations along the east coast in the 11th and 12th centuries. These include the short lived settlement at L'Anse aux Meadows on the northern tip of the Island of Newfoundland (Ingstad 1977; McGhee 1991:44-48). Further north there is also considerable evidence of Inuit and Norse contacts (McGhee 1991:51-57; Schledermann 1996:Chapter 10) as well as contacts with the Late Palaeo-Eskimo Dorset complex (Patricia Sutherland, Canadian Museum of Civilization, personal communication). An 11th century Norse coin has been claimed to have been discovered in archaeological context at the Goddard site in Penobscot Bay on the central coast of Maine (Bourque and Cox 1981). There is circumstantial evidence, however, to treat the foregoing claim with some scepticism (Carpenter 2003). The only good evidence of a Norse item being archaeologically recovered in the south is represented by a small sheet of zinc-lead alloy recovered from a 12th century Iroquoian village east of Toronto (Wright 1994: 50). Further evidence of Norse and Maritime Algonquian contacts can be surmised from the butternut wood identified at the 11th century Norse settlement of L'Anse aux Meadows (Wallace 1986:300). Butternut trees (*Juglans cinerea*) do not grow north of New Brunswick and the St.Lawrence Valley and must have been acquired from southern sources by the Norse. The same argument could be made for the wild grapes (*Vitis riparia*) mentioned in the Vinland sagas of the Norse as it is a species that has the same distribution as butternut trees. Such exotic products must have arrived at their archaeological locales through native trade networks in the Gulf of St.Lawrence and northward along the Labrador and northern Newfoundland coasts. Even later European contacts along the east coast are likely considerably earlier than the written documents would suggest. For example, when Jacques Cartier entered the Bay of Chaleur between the Gaspé Peninsula and northern New Brunswick he encountered 40 to 50 Micmac canoes whose occupants wished to barter. Historically, Micmac sea going canoes held five to six or more people plus dogs and gear (Marshall 1986:36). If it is assumed that only the men would have risked face to face contact with the Europeans and if there were five men in each canoe then with 50 canoes there would have been 250 men involved. Further, if three quarters of the Micmac gathering involved were women, children, and elderly people, then a total of roughly 1,000 Micmac could have been associated with this early encounter. This was not a typical Micmac population aggregation, suggesting that the place had a special significance, namely a prearranged trading centre which attracted people from many regional bands (Cook 1993:xxi). This, in turn, suggests that European and native relationships had a longer history than is currently in evidence from the written documents.

Another example of distant Maritime Algonquian cultural contacts is with the Late Palaeo-Eskimo (Dorset complex). Toggling harpoons and other possible Dorset items in ivory and whale bone have been recovered from sites in Merigomish Harbour, Nova Scotia (Smith and Wintemberg 1929: Plate XX, 1 & 2 and possibly 4 & 5). The likelihood of such cultural contacts is reinforced by the recovery of a Late Palaeo-Eskimo ground burin from the Goddard site on the Maine coast (Bourque and Cox 1981:24-25). Further, among the small quantity of archaeological materials from the Îles de la Madeleine in the Gulf of St.Lawrence, while mainly pertaining to Late Maritime and Maritime Algonquian culture as suggested by stemmed and bipointed projectile points and numerous small end scrapers, there was a small triangular end blade which appears to pertain to Late Palaeo-Eskimo technology (McCaffery 1986:14). Contacts between the Îles de la Madeleine and the Maritime provinces is supported by the presence of Cape Breton slate on the former islands (McCaffrey 1986: Annex II; Nash 1978). Cape Breton is 90 km to the southeast of the Îles de la Madeleine across open water; another example of the seamanship and efficient water craft of the Maritime Algonquians.

In addition to the Late Palaeo-Eskimo burin from the Goddard site on the central coast of Maine other exotics pertaining to the Period V occupations of this site include Munsungan chert from western Maine, Parrsboro cherts from the Minas Basin of the Bay of Fundy, Nova Scotia, Ramah quartzite from northern Labrador, and possible Onondaga chert from the Niagara River region of Ontario/New York (Bourque and Cox 1981:15; Doyle 1995: Table A6.4). Some native copper from the site has been attributed to the Cap d'Or source in Nova Scotia. It is cautioned, however, that all of these identifications appear to have been judgmental and not based upon either petrographic or chemical analyses. On a more sombre note, one of the Goddard site burials had a corner-notched arrowhead lodged in the pelvis. In another secondary burial of seven people a femur was pierced by a similar corner-notched point. Such corner-notched points are more typical to the north, at places like Passamaquoddy Bay, while in the Penobscot Bay region somewhat different side-notched and triangular forms prevail(Ibid:17;Bourque1995:178).

Archaeological and early historical documentation suggest that some of the Micmac bands were displaced from the coast of the Gaspé Peninsula in pre-European times by the expansion of the St.Lawrence Iroquois from the Québec City region. Indeed, Jacques Cartier encountered St.Lawrence Iroquois near Cap d'Espoir close to the entrance to Chaleur Bay (Bigger 1924). This territorial encroachment apparently led to the bloody conflict between the Maritime Algonquians and the St.Lawrence Iroquois documented in the historical records. The fact that the Gaspé coast was unoccupied when the Europeans began their explorations upriver (Barré 19756; Benmouyal 1987:380-381) further suggests that the area may have been a no-man's land although it appears to have been periodically exploited by the Micmac and the Maliseet from the south, the Montagnais from the north shore of the Gulf of St.Lawrence, and the St.Lawrence Iroquois from upriver. Archaeological evidence indicates that, beginning around AD 1500, the St.Lawrence Iroquois frequented the Gulf of St.Lawrence and that contacts with Maritime Algonquians would have been inevitable even if the latter's occupation of the Gaspé coast was only seasonal (Martijn 1990). The word "Iroquois" itself has been suggested to be a French corruption of a Basque-Algonquian word meaning "killer-people" (Bakker 1990). On the headwaters of the St.John River the Montagnais from the north shore of the St.Lawrence exploited the region as well as St.Lawrence Iroquois. The major occupations, however, pertain to Maritime Algonquians likely coming from the Bay of Fundy region. Such an exceptional multi-cultural overlap into a small area (Chalifoux et Burke 1995:260) would have been due to the deposits of high quality Touladi chert. Towards the end of Period V a small quantity of St.Lawrence pottery has been recovered from sites in northern New England (Petersen 1990). Such occurrences may reflect the presence of St.Lawrence Iroquois women as either captives or wives living on Maritime Algonquian sites. With the dispersal of the St.Lawrence Iroquois late in the 16th century it was the Micmac who left their mark on the St.Lawrence. The word "Québec" is believed to be derived from the Micmac word "Gepèg", meaning "narrows" (Martijn 1991). There is also considerable documentary evidence of Micmac involvement in the area during the late 16th and 17th centuries which raises the question whether these really were Micmacs or were they Maliseet and Passamaquody who would have claimed the St.John River as there own. Of course, Micmas could have had access to the Québec region by smaller river systems transecting the Gaspé Peninsula or via the Gulf of St.Lawrence.

As noted in the section on **Settlement patterns**, Ramah quartzite from northern Labrador occurs in minor amounts throughout the Maritime provinces and the Gaspé Peninsula on Period V sites. The distances involved in the transportation of this material are truly impressive and probably reflect numerous hand-to-hand exchanges between different seafaring people. It is more than1,600 km in a straight line from the Ramah deposits in Labrador, for example, to Penobscot Bay on the Maine coast. The water route involved would have been closer to 2,000 km. Even though some of the judgmental assignments of this highly distinctive stone to geological source may be in error or some Ramah quartzite could have been scavenged from Middle Maritime culture sites along the north shore of the Gulf of St.Lawrence dating to Period III, particularly between La Tabatière and Blanc-Sablon, Québec, there would still have been a percentage of the material that was actually transported from northern Labrador to Period V sites in the south. This, as with some of the other exotic materials, clearly indicates the existence of multi-cultural trade networks and that such networks, as opposed to simple trade, likely had alliance and mutual support dimensions in all likelihood bonded by blood ties through marriage.

The long period of contact between the natives of the Maritime provinces and the French must have had some mutually beneficial aspects as it obviously resulted in a native preference regarding Europeans, even if it may have only been a case of "better the Devil you know". An example of this is found in a letter written by the Passamaquoddy to the Governor of Massachusetts in 1764 complaining that some of his citizens had occupied land in Passamaquoddy Bay without permission. Accompanying the complaint was a request that the Governor arrange for a priest to be sent to administer to their spiritual needs and went as follows: "we Pray That You Would Consider and have Pittey on ouer Souls and Send us one We Should Be Glad That You Would send us a French one But if not Send us one of Youers For aney is better than none..." (Baxter 1906-16 (24):115). Of course, the Passamaquoddy had been exposed to the teachings of the Catholic Church for over two hundred years.

Human biology:

As has been noted, the normally acid soils of the Maritime provinces and adjacent regions dissolve all bone except where preserved by exceptional circumstances such as in the neutralizing environment of a shell midden. Human burials in shell middens, the only place they might survive, however, are rare (Sanger 1979a:112; 1988:94). Presumably the flexed and secondary bundle burials wrapped in birch bark and furs associated with the 16th and 17th century copper kettle burials containing European trade items, reflect, to some degree, pre-European burial practices. Given the circumstances, nothing can be said concerning pre-European Maritime Algonquian human biology. The absence of occasional "caches" of stone implements which could represent grave offerings where all organic materials have been dissolved would suggest that imperishable grave offerings were not the norm during the precontact period. This, of course, does not exclude the probability that elaborate skin, plant fabrics, and bone implements were placed with the deceased.

Inferences on society:

Early European documents and later ethnological studies indicate that Micmac society was quite fluid with individuals and families shifting between bands at will. In fact, the term "Micmac" is more a generalized ethnic identity than a tribal one (Bock

1978). There are few early equivalent documentary records available for the Maliseet and the Passamaquoddy. In such egalitarian communities relationships begin with the family, extend to the local group, then to the band, and, finally to groupings of bands related by consanguine and fictive kinship ties. The several exogamous clans which existed among the Micmac would have insured that intermarriage between communities was the rule. Societies were organized into patrilocal bands with a male leader or big man, who, in fact, actually wielded little power. Descent was patrilineal/bilateral but, given the considerable mobility of families, descent practices would have had only a limited influence on the composition of communities. Villages were normally quite small, perhaps consisting of six nuclear families or around 30 people, who would only periodically come together in one place at any one time (Nash 1986:156). While there was likely some multi-band cooperation it would have been premised on blood and, therefore, simply represent an extension of the household economy.

Marine resources, particularly salmon, which were the foundation for the development of ranked societies along the West Coast of Canada did not play a similar role on the east coast. While it has been suggested that rudimentary methods of food storage on the east coast were a factor placing limits on the development of social complexity (Sanger 1995:343) it was likely more critical that the food resources of the east coast were not as concentrated as along the west coast and, therefore, could not be as readily dominated by an elite who could then enforce a degree of sedentariness on the community in order to amass riches in the form of food surpluses necessary for the development of ranked societies. There is always a danger in assuming that the early European documentation accurately reflects the pre-European social conditions of the people being described. As has been noted, the "Drastic depopulation during the first decades of the 17th century undoubtedly altered the pre-contact social organization" (Aikens 1986:14-15). In fact, it is likely that the depopulation, at least of the Micmacs, had already begun during the latter half of the 16th century. Although the traditional interpretation of Micmac social structure is that of a loose grouping of egalitarian bands (Bock 1978; Wallis and Wallis 1955) it has been recently argued that, with a closer examination of the early 17th century historical documents and by making greater allowances for the massive cultural change which took place over the 400 years of contact with Europeans, a more complex pre-European social condition can be inferred (Miller 1983). This alternate view suggests that at the time of contact Micmac society had achieved the most basic level of tribal organization. It is proposed that nuclear families, grouped into bilocally extended families, were controlled by three hierarchical levels of chiefs. These, in ascending rank, were the local chief, the district chief, and the supreme or grand chief. All of these chiefly positions were presumably based upon inheritance through the male line although ability was also an important consideration. In Miller's view, this social organization constituted a ranked society. There were some slaves but they did not constitute an important element in the society. In such a system the bilocal extended family group would be closer to the anthropological classification of a tribe than a band with band kinship being integrated at a higher level by the hierarchy of chiefs. Thus, it is argued that Micmac leadership was trending away from the tribe towards a chiefdom where a ranked system of chiefs>commoners>slaves existed. In this respect, Micmac society is seen as being in between a tribal and a chiefdom level of social organization.While it is acknowledged that there is considerable variability in the character of band social organizations, as well as tribal varieties, the argument for ranked societies on the east coast is not convincing and there is no substantial documentary or archaeological evidence to support the suggestion for an evolving chiefdom. The hierarchy of chiefs, for example, was a quasi-political organization and not an established element of social structure. Although chiefly inheritance was through the male line and theoretically could have contributed to the establishment of an elite, the fact that ability was also an important consideration in the elevation of an individual to a chiefly position and that, as the Recollet missionaries observed, a chief's flock only followed his instructions as it suited them as individuals, clearly indicates the primacy of egalitarian band social structures. A band organization, crosscut by several exogamous clans requiring inter-band marriages, would have been sufficient to establish a grouping of blood-related bands who had a sense of a mutually beneficial relationship. This is suggested by the fact that the word "Micmac" means "Allies" (Jenness 1955:267). There is certainly nothing in the archaeological record to support arguments for the development of ranked societies along the east coast, unlike the archaeological situation on the west coast of Canada. There are hazards in indiscriminately applying ethnohistoric and ethnological analogies to archaeological reconstructions. Such reconstructions must be based upon archaeological evidence (Sanger 1996), particularly when it is appreciated that there was likely at least 100 years of native and European contact prior to the earliest written records (Sanger 1979a:112).

Limitations in the evidence:

Rising sea levels have destroyed much of the archaeological record of the Maritime provinces and while not as severe during Period V as in earlier Periods it has still been substantial (Davis 1980; Simonsen 1979). Rising sea levels also impact river gradients which have a direct effect upon migratory fish concentrations thus forcing fishing sites to relocate through time. Along the Gaspé coast a reverse situation has taken place with the uplifting of sites above sea levels. Period V sites in this area, however, are situated along the lowest terrace and are, therefore, vulnerable to recent human activities like road construction and gravel and sand quarrying. Interior sites, probably never too numerous or substantial, have been seriously impacted by dams constructed to support the lumbering industry and transportation systems (Davis 1991:101). For example, along the Shubenacadie River and lake system, which transects Nova Scotia from Halifax to the Minas Basin on the Bay of Fundy, only a 3 km stretch has not be obliterated or seriously disturbed by recent activities such as the 19th century construction of the Shubenacadie Canal (Preston 1974). Differing degrees of coastal stability, determined by such factors as the underlying rock substrata and exposure to the sea have resulted in an uneven distribution of archaeological research activity. This is clearly reflected in the concentrated excavation of shell midden sites in Passamaquoddy Bay. Even here the archaeological record is no older than 2,500 years (Sanger and Kellogg 1989). Difficulties also arise in attempting to establish precise archaeological contexts in shell middens with their differential accumulations of shell and the downward movement of small objects as the shell decomposes (Sanger 1981). The foregoing disadvantages, however, are outweighed by the advantages of excavating shell middens where semisubterranean dwellings can be identified and often specific shell dumping areas demarcated. Even on shell midden sites, however, organic preservation is poor. For example, dwellings placed further back on the site away from the shell middens suffer from the reduced acid neutralizing influences of the shell. There is also the risk of error in assuming a stratigraphic sequence on multi-component shell midden sites which are often composed of spatially and temporally distinct occupation areas. For a consideration of some of the problems involved in isolating components or approximation thereof see Spiess (1989).

A serious problem has been the limited funds available for archaeological research in the areas occupied by Maritime Algonquian culture. The problem has been further exacerbated by the limited number of archaeological publication outlets; particularly publications which are likely to be available to a large audience. There is no doubt that archaeological interpretation in the Maritime provinces has benefited from proximity to work carried out in adjacent Québec and Maine. The fundamental problem, however, is that time is running out for the archaeological record in the Maritime provinces due to the inexorable processes of erosion and recent human activities.

CHAPTER 32

ST. LAWRENCE IROQUOIS CULTURE

Précis:

The term "St.Lawrence Iroquois" encompasses an unknown number of related tribes who occupied the St.Lawrence drainage basin from the eastern end of Lake Ontario to the Québec City area. They were a people who spoke an Iroquoian language and shared most cultural practices characteristic of Iroquoian peoples in eastern North America. What sets them apart from other Iroquoian-speakers to the south and west was that they were the first Iroquoian people to have direct contact with Europeans early in the 16th century. Easternmost St.Lawrence Iroquois communities in the Québec City region followed a subsistence pattern more heavily reliant upon sea mammal hunting and fishing than their westerly and more horticulturally dependant kinsmen. Evidence from the Québec City region, however, is currently too limited to evaluate the extent of eastern reliance upon marine animal resources. Prior to the end of the 16th century the St.Lawrence Iroquois disappeared as a distinct entity. There is some limited European documentation describing aspects of St.Lawrence Iroquois culture (Biggar 1924; Cook 1993) but most information on these people comes from archaeology.

During Jacques Cartier's voyages of exploration on the St.Lawrence River and Gulf in 1534, 1535, and 1541, he described two groups of St.Lawrence Iroquois; the Stadaconans in the Québec City area and the Hochelagans on Montréal Island. The two groups do not appear to have been on the best of terms and likely what Cartier was observing were elements of two separate confederacies composed of related tribes. He described seven St.Lawrence Iroquois villages in the Québec City region and only one on Montréal Island. If, however, he had proceeded above the Lachine Rapids, following the St.Lawrence River into what today is eastern Ontario and adjacent New York, he would have either encountered and/or been in the territories of the greatest concentrations of St.Lawrence Iroquois villages. The latest French reference to the St.Lawrence Iroquoi occupation of the St.Lawrence Valley is in 1580. When Samuel de Champlain visited the area in 1608 the St.Lawrence Iroquois had disappeared and their former homelands were being contested by a confederacy of Huron, Montagnais, and Algonkins versus the League of the Iroquois composed of the Mohawk, Onondaga, Oneida, Cayuga, and Seneca. Given the limited 16th century European documentation it falls the task of archaeology to determine the origin, life ways, and fate of this large grouping of Iroquoian people who, according to the analyses by linguists of the vocabulary glossaries gathered by Jacques Cartier, spoke a Iroquoian dialect distinct from that of other Iroquoian peoples documented in the 17th century.

European activities in the Gulf of St.Lawrence in the 16th century were focussed on whaling and fishing with hundreds of French, Spanish, Portuguese, English, and Basque ships seasonally exploiting the region (Turgeon 1990:82). An insightful evaluation of European relationships in the early 16th century with the St.Lawrence Iroquois is available (Martijn 1990). The same scholar also published an informative outline of the development of archaeology in Québec, including archaeological activities related to the St.Lawrence Iroquois (Martijn 1998). Although significant European trade with the local natives likely took place by 1540 there is little direct archaeological evidence of such despite the fact that some trade items, like iron implements and copper kettles, could survive in the archaeological record. Undoubtedly sites spanning this contact period have either been destroyed by European settlements or, hopefully, are yet to be located.

Unlike the normally clustered villages of contemporary Iroquoian groups, the St.Lawrence Iroquois occupied an area extending lineally more than 500 km from the east end of Lake Ontario to just below Québec City where the St.Lawrence Estuary begins. Clusters of large numbers of village sites, similar to other Iroquoian groups, are limited to northern New York and eastern Ontario. In contrast, villages below Montréal appear to have been widely separated. The latter settlement pattern would suggest that hostilities with neighbouring people were not sufficient to require village concentrations as a defensive tactic. Documented locations of Stadaconan villages only along the north shore of the St.Lawrence River in the early 16th century, however, indicate some threat from east of the River. Stadaconan summer fishing and warring parties travelled east into the Gulf of St.Lawrence, at least as far as the eastern end of the Gaspé Peninsula, a distance of 500 km from Québec City. There has been considerable difficulty in distinguishing possible St.Lawrence Iroquois archaeological sites from those of the contemporary Montagnais Algonquian occupation east of Québec City. A limited number of St.Lawrence Iroquois archaeological sites have been discovered along the Richelieu River as far south as Lake Champlain but it is not yet clear whether these reflect a year-round occupation, a seasonal one, or if some of the sites actually pertain to the Western Abenaki Algonquian-speaking peoples (Pendergast 1990a).

Initially, archaeologists assigned the St.Lawrence Iroquois to the Onondaga and Oneida tribes on the grounds of similarities in pottery and pipe styles (MacNeish 1952; Pendergast 1962; Wintemberg 1936; Wright 1966). Bruce Trigger's conclusion, based mainly on linguistic grounds (1966), that the St.Lawrence Iroquois were a group distinct from the eastern Iroquois (Onondaga, Oneida, Mohawk), however, has been upheld by subsequent research. It is still apparent, in terms of archaeological material culture, that the St.Lawrence Iroquois bear a closer relationship to their eastern Iroquoian neighbours to the south than they do to the tribes who would eventually become members of the Huron Confederacy in central Ontario. Indeed, this technological relationship can be traced back in time to at least AD 1000. Others believe that the St.Lawrence Iroquois developed in place in the St.Lawrence Valley out of the Point Peninsula complex of Period IV and the first part of Period V from AD 500 to 1000. Thus, controversy exists whether the St.Lawrence Iroquois cultural development occurred in the St.Lawrence Valley or was the product of an intrusive expansion out of what is now central New York State. The transitional phase involving the 13th and 14th centuries which led directly to the Onondaga, Oneida, and Mohawk is largely absent from northern New York and the St.Lawrence Valley. Given the absence of any Iroquoian occupation in northern New York during the 11th to 14th centuries (Abel and Fuerst 1999) the most parsimonious origin explanation at this time is that the ancestors of the St.Lawrence Iroquois were an offshoot of the same cultural development which gave rise to the eastern Iroquois and only moved into the area in the early 15th century from whence they spread into eastern Ontario and down river through Québec. Nothing is quite that simple in archaeology, however, as evidenced by the single mid 14th century Lanoraie village site down river from Montréal. It would appear that there was more than one migration out of the south and possibly by different routes.

It is important to view the villages of the St.Lawrence Iroquois as self sufficient communities which functioned within a broad cultural interaction sphere involving other Iroquoian and Algonquian-speaking peoples. Cultural traits, both physical and intellectual, diffused throughout this interaction sphere with considerable freedom, albeit not always with the same intensity or time frame (Clermont 1980:139). In this respect, it is necessary to pull back on occasion from local, particularistic problems and view issues from a Pan-Iroquoian perspective. At the same time, it is important to recognize that the individual village community was the central social reality of its members even though each village constituted a part of a local tribe and that a number of tribes would have been organized into confederacies. Thus, there would have been a sliding scale of personal attachment running approximately from nuclear family to lineage to clan to village to tribe to confederacy, and, last, to general cultural and linguistic affinities extending beyond the confederacy level such as being Iroquoian as opposed to Algonquian. In a majority of instances confederacies were likely mutual non-aggression pacts which only functioned in unison when reciprocal benefits were apparent. Anthropological-historical cultural constructs like the St.Lawrence Iroquois or the Huron are actually inaccurate European imposted generalizations of the social realities that once existed.

It has been estimated that there were 10,000 St.Lawrence Iroquois at the time of European contact; 5,000 above Montréal and 5,000 below (Clermont 1980a). This admittedly speculative estimate is likely too conservative. The major St.Lawrence Iroquois populations of the 15th and16th centuries were in what is now eastern Ontario, New York, and Québec from Montréal upriver and alone likely represented 10,000 or more people. Very few substantial horticultural villages are known down river from Montréal and it is likely that no more than 3,500 St.Lawrence Iroquois occupied the region. Until more research in carried out on the largely unreported villages in northern New York and there is more evidence coming from the St.Lawrence River down river from Montréal all such population estimates must remain highly speculative particularly as the time factor is largely uncontrolled.

The technology of the St.Lawrence Iroquois is characterized by pottery cooking vessels, pottery and, to a lesser extent, stone smoking pipes, polished stone celts, grinding stones for processing corn into flour and other products, a very weak chipped stone industry, and an elaborate bone tool assemblage. There are east-west differences in technology although the eastern situation needs to be clarified with reference to ethnicity - Iroquoian, Algonquian, or a combination of the two. As with the technology, there are east-west differences in subsistence. From approximately Montréal westward a horticultural economy based on corn, beans, squash, sunflower, and tobacco flourished while further down river there was a greater reliance upon the hunting of sea mammals. Fishing appears to have been important everywhere although a greater range of fish species would have been available in the east where marine species like mackerel could be caught in the Atlantic despite the long seasonal sojourn from the Québec City. Mackerel (*Scomber scrombus*) are particularly rich in a range of fats and is high in oil content (Scott and Scott 1988:454) and would have represented a valuable winter storage food. The American eel (*Anguilla rostrata*) was important for the same reasons. Corresponding with the different economic emphases on horticulture versus hunting are the large, heavily defended and clustered villages to the west in contrast to the small, unpalisaded, widely dispersed and most often multi-component sites of the east.

Very little is known regarding cosmology. Flexed burial within the village confines was the norm and occasionally small associated cemeteries. Some would argue for the existence of ossuaries containing numerous secondary burials but this has yet to be archaeologically demonstrated. Information on human biology is correspondingly limited. Dental cavities were common along with tooth loss as can be expected with a carbohydrate rich diet of corn. Arthritis was also an endemic condition and rare instance of tuberculosis and other diseases have been recorded. The far flung trade networks which characterized earlier periods had broken down by this time and while contacts, peaceful or otherwise, are apparent in foreign pottery styles and other traits, there is relatively little evidence of the earlier trade network in native copper from Lake Superior and marine shell from the east coast. It is apparent that the St.Lawrence Iroquois were late comers in the adoption of corn horticulture as it does not appear much before AD1300 even though corn has been recorded in Southern Ontario as early as AD 500. This impression of lateness in the adoption of horticulture may stem from our ignorance of the timing and intensity of influences from further west. The earliest Ontario Iroquois site possessing all of the core Iroquoian cultural traits, including corn horticulture, is the Miller site east of Toronto (Kenyon 1968), estimated to date between AD 800-900. It was likely that until a horticulture economic base was established, with its concomitant concentrations of large populations, the need for defended communities of people living in communal longhouses, did not exist. For the St.Lawrence Iroquois a full-blown Iroquoian settlement-subsistence pattern appears to have been mainly a western phenomenon with the eastern St.Lawrence Iroquois able to maintain, to a far greater extent, an earlier reliance upon hunting and fishing.

Despite arguments to the contrary (Jamieson 1990a), the preponderance of the archaeological evidence suggests that the disappearance of the St.Lawrence Iroquois or, at the very least, the western concentrated populations, was due mainly to their eventual conquest and absorption by the southern Huron tribes who occupied the north shore of Lake Ontario and the Trent River system (Pendergast 1993). Evidence of Mohawk, Onondaga, and Oneida adoption of some of the St.Lawrence Iroquois peoples (Kuhn et al. 1993) does not approach the magnitude of the evidence from the Huron villages. For another scenario regarding the dispersal and absorption of the St.Lawrence Iroquois see Chapdelaine (1995a: Fig.4). It is important to keep these various scenarios of what happened to the St.Lawrence Iroquois at the end of the 16th century separated into events taking place either above or below Montréal as they were likely of a quite different nature. The issue surrounding the actual causes underlying the disappearance of the St.Lawrence, as opposed to where the remnant populations ended up, is still another matter of controversy. A number of archaeologists believe that, after nearly two hundred years of conflict, the southern Huron tribes finally destroyed the western St.Lawrence Iroquois and absorbed the remnants, mainly women and children. The Mohawk, Onondaga, and Oneida appear to have also been involved in this destruction of the St.Lawrence Iroquois but to a much lesser extent. It is a reasonable speculation that by the 15th century the beginnings of the League of the Iroquois were already in place (Fenton 1998:Table 1) and was a probable factor in the movement of the St.Lawrence Iroquois out of New York into Ontario and Québec. Others (Jamieson 1990a) have suggested that the eastern Iroquois attacked the St.Lawrence Iroquois with the remnants taking refuge in the villages of their supposed Huron allies. Ignored by the advocates of a peaceful absorption of elements of the St.Lawrence Iroquois by some of the Huron tribes is the nature of the former's technology found in the Huron villages. On these sites the St.Lawrence Iroquois technology is predominantly pottery vessels and, to a lesser extent, pottery discoidal beads (Pendergast 1981). These are female elements of technology. Male elements of technology, like the equally diagnostic pottery smoking pipes, are either absent or rare. In historically documented Iroquoian warfare captive women and children were often adopted into the villages of the conquerors. Enemy warriors were most often put to death. In short, the surviving St.Lawrence Iroquois technology on the Huron villages suggests the adoption of captive women and children to the substantial exclusion of men. An unknown but potentially important factor is if the St.Lawrence Iroquois, the first Iroquoian people to have prolonged contact with the Europeans, contracted introduced diseases to which they had no immunity resulting in epidemics which weakened their capability to defend themselves. While lacking direct evidence, the foregoing could have been a factor in the disappearance of the St.Lawrence Iroquois (Fenton 1940:175).

Limitations in the evidence pertaining to the St.Lawrence Iroquois are as follows: the limited substantive information from northern New York; the paucity of horticulturally based village sites down river from Montréal; and the problem of accurately distinguishing Iroquoian from Algonquian archaeological sites down river from Québec City. With reference to the latter, it has been argued that the occupants of sites between the mouth of the Saugenay River and Kegashka on the north shore of the Gulf of St.Lawrence were originally Algonquian but were replaced by Iroquoian people around AD 1300 (Chapedelaine 1984: Tableau 1). Evidence in support of such an intrusive population appears to have been mainly based upon the presence of chipped stone derived from southern sources in conjunction with pottery styles. Some of the main stone sources, however, are well within Algonquian territory and it is well known that Algonquian-speaking people frequently shared the pottery styles of their Iroquoian neighbours. Part of the problem is that in an area such as the Gulf of St.Lawrence many archaeological sites could represent Iroquoian or Algonquian or a mix of Iroquoian and Algonquian materials.

Cultural origins and descendants:

On the basis of pottery and pipe styles St.Lawrence Iroquois culture was initially attributed to the historically documented eastern Iroquoian tribes of New York State and specifically the Onondaga and/or Oneida (MacNeish 1952:Figs.16&18; Wintemberg 1936:124; Wright 1966). This ethnic assignment was questioned by Bruce Trigger (1966), mainly on the grounds of the St.Lawrence Iroquois language glossaries collected by Jacques Cartier in the early 16th century. The St.Lawrence Iroquois are now recognized as a distinct grouping of tribes occupying territories in the 16th century close to the St.Lawrence River stretching from the east end of Lake Ontario to Québec City. Their origins are still, however, controversial. Many archaeologists have suggested that St.Lawrence Iroquois culture likely developed in place in the St.Lawrence Valley and the eastern end of Lake Ontario, albeit within a framework of varying degrees of geographic regionalism (Chapdelaine 1980; 1989; Clermont et Chapdelaine 1982; Pendergast 1975). There are problems with the aforementioned position which is largely based upon pottery recovered from multi-component seasonal camp sites (Gates-St.Pierre 1999; Morin 2001). Archaeological cultural assignments are heavily dependant upon technological remains. The dominant element of technology on all Iroquoian sites are fragments of pottery vessels, generally accounting for as much as 90% of the recovered artifacts. Stylistically, St.Lawrence Iroquois pottery, as well as smoking pipes, was involved in a technological tradition shared with the Mohawk, Onondaga, and Oneida. This technological relationship is so close that at one time it was believed the ancestors of the Onondaga, Oneida, and Mohawk were the descendants of St.Lawrence Iroquois who had emigrated south to their traditional homelands in New York State. Archaeological research has since demonstrated that the Onondaga (Bradley 1987; Tuck1971), the Oneida (Pratt 1976), and the Mohawk (Lenig 1965), evolved in place in their historic homelands. However, with the exception of the Lanoraie site near Trois-Rivières (Clermont et al. 1983), evidence of the 13th and 14th century transitional phase which led to the eastern Iroquois in New York is absent. In essence, either the St.Lawrence Iroquois were a development from the Oak Hill horizon and shared in the same cultural development which gave rise to the eastern Iroquois (Lenig 1965) or it was the product of a local development in the St.Lawrence Valley but from which the 13th and 14th evidence is largely missing. The Oak Hill horizon was spread across much of central New York immediately to the south of the northern New York St.Lawrence Iroquois villages of the 15th and 16th centuries (Ibid:Fig.19). The origin hypothesis favoured here is that the St.Lawrence Iroquois were an offshoot of the same cultural development which gave rise to the eastern Iroquois. For the most part, they appear to have shifted north into northern New York in the15th century and then moved into adjacent Ontario and Québec and, thence, down river to the Québec City area. The vexing problem of establishing a convincing relationship between an archaeological material cultural and the ethnicity of its producers will be considered in the section on **External relationships**.

The St.Lawrence Iroquois occupation of the north side of the St.Lawrence River in eastern Ontario involved a 15th century migration across the St.Lawrence River from New York State (Pendergast 1975). A smaller migration pushed into adjacent Québec (Clermont and Gagné n.d.). There were no ancestral roots in either Ontario or adjacent Québec. The reason or reasons underlying these population movements can only be speculated upon but pressure from the eastern Iroquoians would appear to be the most parsimonious explanation at this time. Even earlier migrations had taken place in the 14th century as evidenced by the isolated Lanoraie site down river from Montréal. With regard to the latter migration, considerations should not be limited to a Lake Ontario route but include a possible route via the Richelieu River from Lake Champlain. It may not be fortuitous, for example, that the only documented 14th century St.Lawrence Iroquois village, the Lanoraie site, is only a short distance from where the Richelieu River empties into the St.Lawrence. Whether Lanoraie represents the migration of a single village or other villages are yet to be found is a moot question. Evidence further east to Québec City is even more tenuous but does not contradict the possibility of a relatively recent down river movement instead of a long cultural development as currently advocated by most Québec archaeologists (Chapdelaine 1995a; Gates St-Pierre 1999). Whatever the dynamics which resulted in the St.Lawrence Iroquois occupation of the St.Lawrence Valley they were obviously not simple and details still need to be worked out in order to resolve certain weaknesses in the various cultural origin scenarios.

St.Lawrence Iroquois cultural development should not be viewed as a simple unbroken lineal event but rather as a product of a number of geographically discrete but intermeshing influences, sharing to varying degrees diffused elements from the south and west grafted onto already regionally distinctive assemblages. Certainly the ease of water travel along a major river route connecting the interior of the Continent to the Atlantic Ocean would have simplified both the movement of people and ideas. It is also necessary to recognize that the *major* St.Lawrence Iroquois culture farming sites involved the area from Montréal west and not to the east. Down river the evidence of significant horticultural activity is extremely sparse.

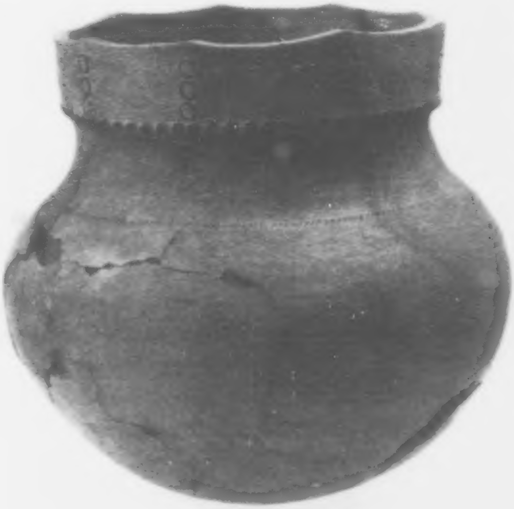
The multi-component, culturally mixed nature of many of the archaeological sites along the St.Lawrence River has presented interpretational problems. The Bourassa site on the St.Maurice River, for example, has occupations spanning AD 900 to 1300 which, on the basis of pottery styles, involved an AD 900 to 1100 Owasco-like occupation followed by pottery that does not exhibit a particularly close relationship to either Owasco or to the 14th century St.Lawrence Iroquois Lanoraie site 75 km upriver (Clermont et al. 1986). On the other hand, the dominance of linear stamped and incised pottery during the late occupation of the Bourassa site, as well as a good representation of the cord wrapped stick and dentate stamp decorative techniques, could suggest an occupation slightly preceding the Lanoraie site and, thus, a time factor could be involved. Because of component mixture nothing can really be said concerning the rest of the assemblage. Similarly, at the multi-component Place-Royale site in Québec City cultural units had to be based upon pottery characteristics as discrete components could not, for the most part, be isolated from one another. The late pottery from this site closely resembles that from the Lanoraie site nearly 200 km upriver (Clermont et al. 1992:Tableau 4.4) with its high incidences of cord wrapped stick and dentate stamp impressions, high collars, and motif patterns. For a brief discussion of regional cultural sequencing based upon pottery characteristics and trends see Mercier (1990). If by now the reader has been totally confused by the wide ranging interpretational nuances involving pottery it has been regrettably necessary as much of the archaeological effort to elucidate the culture history of the region has been premised upon pottery and, with few exceptions, pottery alone. This, in itself, represents a significant weakness in the entire process but one that can hardly be avoided at this point in time.

The 16th century St.Lawrence Iroquois consisted of the various tribes subsumed under Jacques Cartier's descriptions of the Hochelagans on Montréal Island and the Stadaconans in the Québec City region. Based on the eye witness description of the village of Hochelaga and the archaeological remains from the Dawson site recovered in the 19th century in downtown Montréal (Pendergast and Trigger 1972), suggest that the Hochelagan way of life was essentially the same as that of their kinsmen to the west. In contrast, both the historical documentation on the Stadaconans and the extant archaeological evidence indicates a significantly different way of life. The St.Lawrence Iroquois were the first Iroquoian people to interact with Europeans but they did not survive as a cultural entity into the 17th century. Their fate appears to have been cataclysmic, whatever the causal factors, although prolonged conflict with the southern Huron tribes appears to be the most parsimonious explanation at this point in time.

It has been the practice in the earlier volumes of this work to end the **Cultural origins and descendants** section of each chapter with a listing of pertinent radiocarbon dates. The practice has been abandoned in this volume as the age spread of the radiocarbon readings are simply too broad to be relied upon for precise chronological purposes. For an in depth consideration of the limited utility of radiocarbon dates as applied to the St.Lawrence Iroquois see Pendergast (1993a;1996) and for the details on specific radiocarbon dates see Morlan (1999).

Technology:

St.Lawrence Iroquois technology is essentially the same as that of other Iroquoian groups. The earliest detailed description of St.Lawrence Iroquois technology was also one of the best. The Roebuck site near Prescott, Ontario, was the second village site report in a series of classic archaeological monographs on Iroquoian sites in Ontario written by William J. Wintemberg (Wintemberg 1936). His report has been described by a senior Iroquoian ethnologist, William N. Fenton, as "...virtually an ethnography" (Pendergast and Trigger 1972:xxi). While St.Lawrence Iroquois culture shares the same *categories* of tools as other Iroquoian groups some of the characteristics of the pottery vessels and pipes are distinctive as is the comparatively weak chipped stone industry and the elaborate chipped and ground bone tool assemblage. There are also distinctive specific categories of artifacts such as ornamented pottery discoidal beads and soapstone discoidal beads, antler hoes, and pipes made from the shoulder blade of a deer. The latter item was probably associated with deer hunting magic.



COLOUR PLATE XXI: A ST. LAWRENCE IROQUOIS POTTERY VESSEL This typical pottery vessel was found in a house pit at the early 16th century McKeown site north of Prescott in eastern Ontario. Such pots were manufactured by women who would first carefully clean the clay of all organic matter and then add crushed rock to act as tempering. The malleable clay would then be worked into the desired form by the paddle and anvil method and the decoration impressed or incised into the damp clay. After the vessel had hardened in the sun it would be baked inverted over an open fire. Pottery fragments are the most common artifact to be found on all Iroquoian sites and are particularly important to archaeologists as their various designs, shapes, and methods of decoration are characteristic of particular places and times and are, therefore, extremely useful in establishing spatial and chronological configurations. Intact pottery vessels, like the one above, are a rare occurrences generally associated with some ceremonial act although sometimes they were used as storage containers placed in pits. (Photograph provided by Dawn M. Wright. Scale: 32 cm or 12.6" in height).

Detailed descriptions of the pottery vessel industry are available in a number of site reports beginning with Wintemberg (1936) and expanded upon in the published works of James F. Pendergast, Claude Chapdelaine and others. After William J. Wintemberg's impressive detailed report on the Roebuck site a disinterest in the St.Lawrence Iroquois took hold which was only rectified by James F. Pendergast's forty years of dedicated research, mainly on the eastern Ontario St.Lawrence Iroquois sites. Pendergast also produced a detailed study of St.Lawrence Iroquois pottery pipes (Pendergast 1992) and other aspects of St.Lawrence Iroquois technology. It has been two categories of artifacts, pottery vessels and pipes, which have attracted the greatest amount of attention and especially the former. Such attention is understandable as pottery fragments represent the most commonly encountered single artifact category and both pottery vessels and pipes exhibit greater regional time and space sensitivity than most of the other artifact categories. Although possibly a product of personal bias and familiarity, I would suggest that the artisans who produced the St.Lawrence Iroquois pottery and pipes achieved a level of excellence in both modelling and decorating unexcelled by any other Iroquoian group.

Before proceeding to other considerations of technology it is appropriate to compare the tool kits of some St.Lawrence Iroquois sites as site function appears to have had an impact on the nature of the tool kits. Table 23 compares the 16th century McIvor village site (Chapdelaine 1989), the 14th century Lanoraie village site (Clermont et al. 1983), and the Pointe-du-Buissons, Station 2, 16th century seasonal fishing camp occupation (Girouard 1975) with the Mandeville site (Chapdelaine 1989), the latter regarded by its author as a village site but suggested here to have more likely been a seasonally occupied fish camp. For comparative purposes relative to the issue of site function and its relationship to the categories of artifacts recovered the Dougall site (Wright 1972), a 16th to early 17th century Huron seasonal fish camp site, is included. McIvor in Ontario and Lanoraie in Québec are both horticulturally based villages while the remainder are regarded as seasonal fishing camps.

It was believed useful to include a Huron seasonal fish camp in the Table in order to provide a broader perspective on the effect of site function on the frequencies of categories of artifacts. The Steward site on the St.Lawrence River in Ontario (Jamieson 1990; Wright 1972a), a St.Lawrence Iroquois stratified fishing camp, would have been an excellent candidate for a St.Lawrence Iroquois seasonal fish camp but the necessary quantitative and qualitative data were not available in published form. What is particularly striking on Table 23 is the high frequencies of pottery wastage from both the St.Lawrence Iroquois fishing camps and the Huron fishing camp. As pottery manufacturing would have been a warm weather activity its high frequencies on the three fishing camps suggests an important seasonal activity done in conjunction with trapping and processing fish. There is additional evidence to suggest that the Mandeville site was a seasonal fishing camp and not a year-round, horticulturally based village; a matter which will be considered further in the **Settlement patterns** section. While juvenile pottery vessels and pipes had a combined high frequency at the Dougall site their occurrences at the other sites was quite variable, a fact that likely reflects the subjective nature of individual researchers deciding what constitutes juvenile as opposed to mature workmanship. The high frequency of bone and antler implements at the McIvor site, like other village sites in eastern Ontario, undoubtedly reflects the excellent bone preservation conditions rather than any particular site function factor.

	McIvor		Lanoraie		Mandeville		Pte. Buisson		Dougall	
	f	%	f	%	f	%	f	%	f	%
Pottery vessels	266	36.2	103	20.6	537	21.6	295	29.9	71	15.5
Juvenile pottery	24	3.3	55	11.0	350	14.1	22	2.2	48	10.5
Pipes	41	5.6	133	26.7	365	14.7	50	5.1	5	1.1
Juvenile pipes	?		?		?		2	0.2	45	9.8
Pottery wastage	31	4.2	5	1.0	881	35.4	521	52.7	173	37.9
Other pottery items	48	6.5	24	4.8	99	4.0	5	0.5	29	6.3
Chipped stone	11	1.5	24	4.8	78	3.1	36	3.6	52	11.4
Other stone items	40	5.4	116	23.2	153	6.1	33	3.3	20	4.4
Worked bone	269	36.6	38	7.6	26	1.0	24	2.4	13	2.8
Worked shell	4	0.5	1	0.2	0	0.0	0	0.0	1	0.2
TOTALS	**734**	**99.8**	**499**	**99.9**	**2489**	**100.0**	**988**	**99.9**	**457**	**99.9**

TABLE 23: COMPARISON OF TWO ST. LAWRENCE IROQUOIS VILLAGE SITES, TWO SEASONAL FISHING CAMPS, AND A HURON FISHING CAMP Due to variable reporting in the different publications it was necessary to limit the comparative process to a general level of artifact description. Such a level, however, is adequate for the purposes of the particular exercise. Note: Other pottery items = pottery gaming discs and/or beads; Other stone items = mainly varieties of grinding stones and celts; "juvenile" refers to what are regarded the products of children being taught the craft of pot and pipe manufacture - a partially subjective exercise which likely explains the identification of juvenile pipes only at the Dougall and Pointe-de-Buissons sites; and pottery wastage refers to fired and, less frequently, unfired clay fragments in the form of coils and amorphous lumps, without or with tempering material, which are regarded as the waste products of the pottery manufacturing process.

A method for approximating the degree of relationship between artifact categories from any two sites is called the Robinson-Brainerd Coefficient of Similarity (Brainerd 1951). Coefficients of 200 indicates identical comparative units while coefficients of 0 indicates completely different comparative units. Paradoxically, the highest coefficient using this formulae for the sites on Table 23 was 150.1 for the Dougall site, a Huron fish weir camp at the narrows between Lake Simcoe and Lake Couchiching (Wright 1995:235) mentioned by Samuel de Champlain in the early 17th century (Biggar 1929:56-57), and the Mandeville site on the Richelieu River. Other site coefficient relationships in descending order were as follows: Pointe-du-Buissons and Mandeville - 144.5; Pointe-du-Buissons and Dougall - 133.6; and Mandeville and Lanoraie - 123.2. The other site relationships fell between 100 and 90, except for McIvor and Dougall at 78.9 and Pointe-du-Buissons and Lanoraie at 77.6. The main point is that the highest relationships are registered between the seasonal fishing camps, including the Mandeville site. It should

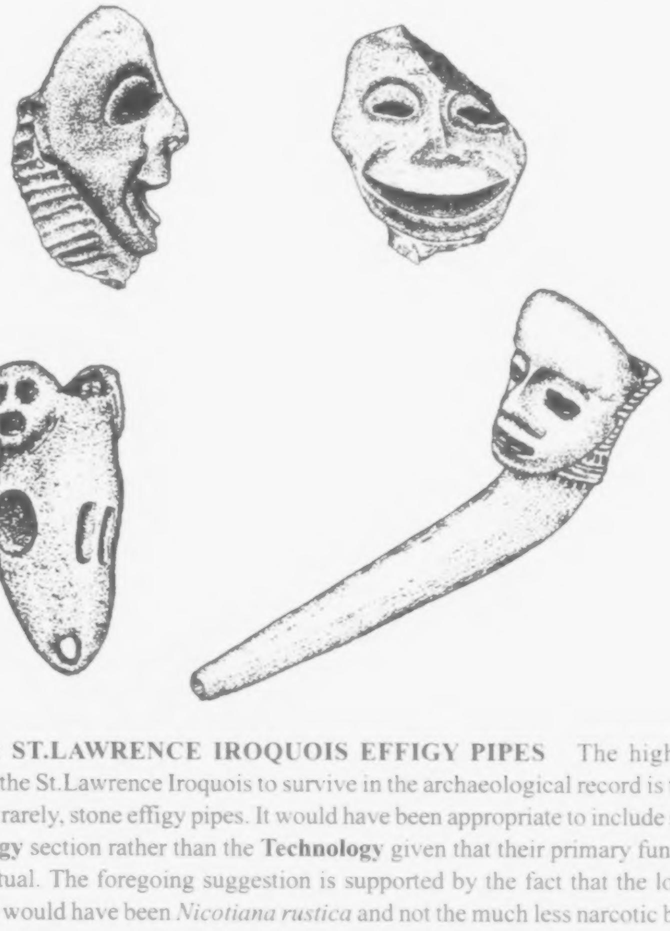


FIGURE 112: ST.LAWRENCE IROQUOIS EFFIGY PIPES The highest artistic achievement of the St.Lawrence Iroquois to survive in the archaeological record is their pottery pipes and, more rarely, stone effigy pipes. It would have been appropriate to include such objects in the **Cosmology** section rather than the **Technology** given that their primary function would have been spiritual. The foregoing suggestion is supported by the fact that the local tobacco species smoked would have been *Nicotiana rustica* and not the much less narcotic blends of the introduced South American species *Nicotiana tabacum* used today which have a quarter of the nicotine of the native species. Native tobacco could "...induce a strong narcotic state..." (Heiser 1987:161) creating a hallucinatory condition essential for communication with the supernatural world. To this day Indian tobacco (*Nicotiana rustica*) is still grown by the Iroquois "...for ceremonial and council purposes..." (Fenton 1998:22). On the lower right is a complete pottery effigy pipe. The two views of the upper pipe fragment belies the suggestion of an English art historian that North American native people lacked a sense of humour as all their art was geometrical. The stone pipe on the lower left would have possessed a wooden stem to fit in the larger hole while the hole in the base would have been used to attach a cord to the stem and guard against an accidental detachment and breakage of the pipe. (Drawings by Mr. David W. Laverie. Scale variable).

be noted that the Mandeville site on the Richelieu River is less than 10 km away from the Lanoraie village site on the St.Lawrence River via a 2 km overland portage between the two river systems and a less than 8 km trip upriver to the south (Chapdelaine 1989:Fig.5.1). Although there is a 200 year gap between the two sites the ease of access between the St.Lawrence River and the Richelieu River may be pertinent if later sites are eventually found in the region.

A distinctive St.Lawrence Iroquois industry involved the chipping and grinding of bone and antler into a wide range of implements. Most common were awls, netting needles, spatulas, conical and bilaterally barbed bone arrowheads, both faceted and toggle (cup-and-pin) worked deer toe bones, and beaver incisor chisels and knives. Less common but equally distinctive items were deer scapulae smoking pipes, antler handles, bear canine knives, and antler hoes. At the Roebuck site (Wintemberg 1936) faceted deer toe bones outnumbered the so-called cup-and-pin variety by 286 to 47, a reverse from that of Huron villages to the west where the latter variety was a popular form albeit decreasing in frequency through time. The function of the worked deer toe bones, which are found in varying frequencies and varieties on all Iroquoian sites, is still conjectural. There is contextual evidence from the mid 14th century Ontario Iroquois Nodwell site that the cup-and-pin deer toe bones, which occurred as pairs in pits, likely functioned as toggles attached to the ends of lashing cords (Wright 1974:100). Such a device could have been used to secure garments and parcel bundles. In contrast, the ground and faceted specimens, with their pitting, notching, grooving, incising, and burn marks (Wintemberg 1936:71-72), may have functioned as gaming discs (see McCullough 1978 for a detailed consideration of similar objects from Huron sites). A comparative study of seven bone artifact categories from St.Lawrence Iroquois and Huron sites (Jamieson 1993) revealed significant differences between the two groups such as the scarcity of bird bone beads on the former sites. A high incidence of liester barbs and prongs on the St.Lawrence Iroquois Steward site was attributed to its function as a fishing camp (Ibid: Table 2).

Minerals, such as iron pyrites, haematite or red ochre, quartz crystals, and graphite have been reported from St.Lawrence Iroquois sites like Roebuck (Wintemberg 1936) and Crystal Rock (Pendergast 1962). The iron pyrites possibly functioned as part of a fire-making kit utilizing a chert (flint) striker to produce a spark, quartz crystal were often used in divining practices (Hamell 1983), and the red ochre and graphite could have functioned as paintstones. It should be appreciated, however, that for the native all objects, animate and inanimate, possessed supernatural power and often symbolic meaning. Minerals like graphite and ochre and products like carbon soot were probable symbolic colours. Ethnographic information regarding face painting is a case in point where black symbolized mourning or war and red life or death by violence (Hamell 1992:456-457). All of the foregoing items occur naturally in close proximity to the sites

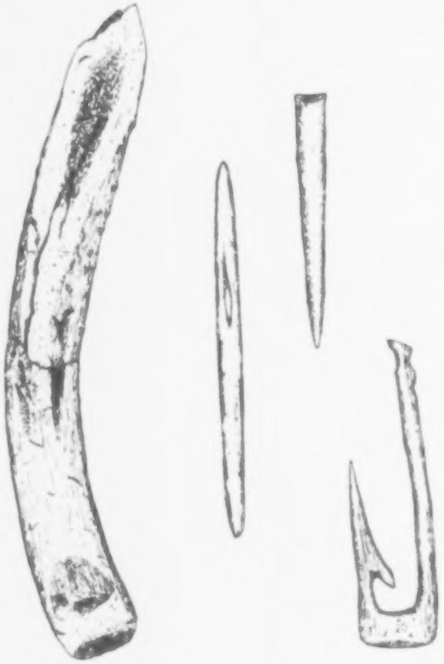


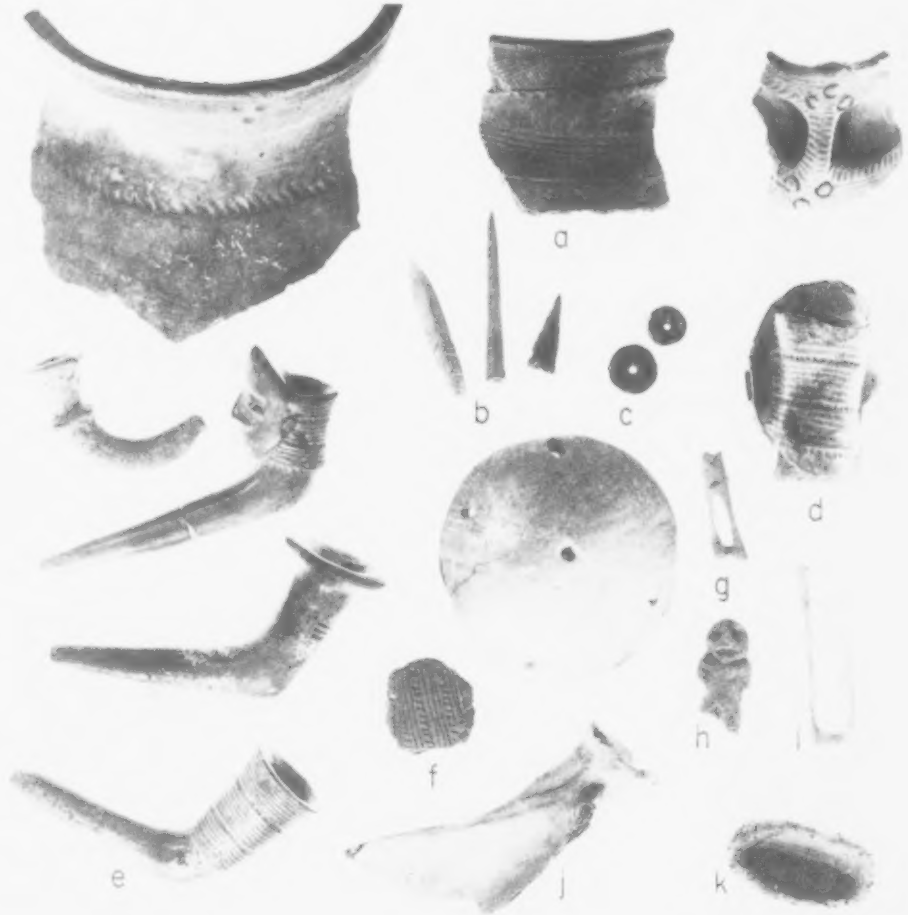
FIGURE 113: ST.LAWRENCE IROQUOIS BONE IMPLEMENTS Bone tools were an important component in the St.Lawrence Iroquois tool kit. From left to right are an antler hoe, a bone netting needle, an antler conical arrowhead, and a bone fishhook The flat netting needles with their central hole have been interpreted as a shuttle device used in weaving with plant cordage (Drawn by Mr. David W. Laverie. Scale variable).

in question. The only exotic items are rare native copper beads from the Crystal Rock site, which likely originated from the Lake Superior region, and the equally rare marine shell beads which would have come from the mid-Atlantic coast.

Understandably, objects manufactured from wood or plant fibres rarely survive on archaeological sites. Water saturation in a spring on the edge of the Roebuck site and accidental charring preserved a number of items such as a wooden disc with a central hole of unknown function, a button object, a birch bark container, cordage, and twined textile (Wintemberg 1936) as well as a wooden cup stated to have come from one of the graves. A recent examination of the text of Jacques Cartier's voyages determined that the Stadaconan canoes were capable of holding eight men (Chapdelaine 1993a:16) suggesting that quite seaworthy vessels were being used by the St.Lawrence Iroquois on the frequently hazardous waters of the St.Lawrence River and Gulf.

A study pertinent to St.Lawrence Iroquois technology was the plotting of the distribution of pottery vessels of less or more than one litre capacity within the Lanoraie longhouse (Clermont et al.1983:Figs.28&29) which revealed no significant difference in the distribution of the two vessel sizes. Preliminary study of the recoveries from pit flotation samples from the McKeown village site have revealed a stone tool industry consisting of very small chert, quartzite, and quartz flake and core expedient tools likely used in the fashioning of the abundant bone and antler implements (Wright and Wright:1993). An often overlooked element of technology are the fire fractured rock cobbles used as heat receptacles for roasting on hearths or placing in water containers to initiate boiling. They tend to be ubiquitous and are usually the first evidence of the presence of an archaeological site.

As has been noted, the study of the decorative motifs and techniques on pottery vessels as well as the shape of the rims have been used as a basic method for establishing cultural relationships and chronologies. The focus on one aspect of technology, pottery, albeit the major element to survive in the archaeological record of St.Lawrence Iroquois sites, has significant limitations as an indicator of ethnicity. For example, the easternmost known single component St.Lawrence Iroquois hamlet is the Masson site overlooking the present village of Deschambault 55 km upriver from Québec City (Benmouyal 1983). The tool kit recovered from the site bears little relationship to those found on the seasonal sites located further down river in the Gulf of St.Lawrence, such as the Ouellet site at the mouth of the Saugenay River (Plourde 1993), the Anse à la Vache site on île Verte across the St.Lawrence from the mouth of the Saugenay River (Tremblay 1998), and the Poste de Jolliet at Mingan (Lévesque 1971). While the Ouellet and Anse à la Vache sites are regarded by their excavators as seasonal St.Lawrence Iroquois hunting-fishing sites, the Poste de Jolliet site, a demonstrable Montagnais site, exhibits close relationships with all of the foregoing sites *except* the Masson site. The Masson site pottery characteristics are similar to the Roebuck site in Ontario (Dr. James F. Pendergast: personal communication based upon his examination of the Masson pottery) although the site produced a much higher frequency of chipped stone tools than are found on contemporary horticultural villages sites further west. If one accepts the Masson site as a bona fide St.Lawrence Iroquois hamlet, and this would appear to be the case, then either St.Lawrence Iroquois technology changed dramatically during the seasonal exploitation of the lower St.Lawrence or the sites in the latter area were actually Algonquian not Iroquoian. There is also the possibly that such sites represent the remains left by both groups at the same sites. The technological similarities of the seasonal sites below Québec City with a Montagnais site like the Poste de Jolliet would suggest that many of these sites are actually Algonquian and not Iroquoian. While technology is absolutely essential to archaeological reconstruction of past cultures it can also lead to questionable interpretations and particularly so when attributed to ethnicity removed from other lines of evidence.



BLACK AND WHITE PLATE XLV: ST.LAWRENCE IROQUOIS CULTURE ARTIFACTS Illustrated are typical pottery vessel rim sherds (a); bone and stone arrowheads (b); soapstone beads (c); a distinctive pottery smoking pipe bowl fragment with a highly stylized D-shaped shield of unknown symbolic significance (d); pottery smoking pipes, the uppermost being the product of a juvenile (e); gaming disc made from a decorated pot sherd (f); one half of a human skull rattle and to its right a ground deer toe bone, possibly a gaming piece (g); a rare pottery human effigy (h); a bone fishhook (i); a smoking pipe made from a deer shoulder blade (j); and a juvenile pottery vessel (k). (Reproduced from Wright 1972b: Plate 23).

Subsistence:

St.Lawrence Iroquois subsistence practices divide along east-west lines with full-blown corn-bean-squash horticulture in the west and a heavier reliance upon hunting and fishing in the east. These emphases were matters of degree, however, with fishing being a particularly important element of the economy throughout the entire area; particularly in respect to its role as an important winter food.

The first part of Period V, from AD 500 to 1000, was apparently pre-horticultural (Cossette 1996) with the earliest evidence of corn in the Québec City area appearing around AD 1300 (Clermont et Chapdelaine 1992). Early in Period V above Montréal at the Hector Trudel station of the Pointe-du-Buissons site there was a foraging pattern which remained relatively unchanged through time. Subsistence inferred from the faunal remains indicated a reliance upon moose, deer, bear, beaver, muskrat, sturgeon, catfish, and suckers with mammals and fish being of equal importance (Clermont 1990:76). At another station of the aforementioned site mammal recoveries were dominated by beaver, muskrat, and deer but also produced evidence of beluga (*Delphinapterus leucas*), seal, dog, and moose (Clermont et Chapdelaine 1983). Fish represented 60% of the faunal remains. Such faunal variability between neighbouring site areas is understandable given the inherent limitations of archaeological sampling. During the pre-AD 1000 time period there is still no evidence of cultigens despite the use of sophisticated recovery methods like flotation by the excavators. The above animal species suggest a mainly spring to summer occupations. If the amassing of winter food supplies were of critical importance at these locales then one would expect to recover more evidence of species who concentrate in the fall like eel, salmon, and whitefish. There is some evidence for an expansion of fishing activity through time and it has been speculated that increasing sedentariness led to a reduction in the carrying capacities of local areas resulting in a heightened need to adopt horticulture.

By the mid-14th century to the west of the Lac St.Pierre widening of the St.Lawrence River horticulture had become the economic underpinning of St.Lawrence Iroquois society. Corn, beans, squash, sunflower, and tobacco were likely introduced into the St.Lawrence Valley by Iroquoian peoples from the south although not each cultigen necessarily entered the area at the same time. At the uniquely early Oak Hill horizon Lanoraie site there was abundant evidence of corn although only two beans (*Phaseolus vulgaris*) were recovered. The limited archaeological recovery of beans on most Iroquoian sites, however, could simply reflect the fact that the parching of corn, but not beans, would have increased the probability of preservation of the former by accidental charring. Different methods of cooking corn as opposed to beans (Waugh 1916) would also favour the accidental charring of corn but not beans or squash or sunflower for that matter.

Mammal remains, mainly caribou, beaver, and moose, appear to have been most important at the Lanoraie site although there were significant numbers of catfish, suckers, and pike (D`Andrea 1984:224). Unusual mammal recoveries were cougar (*Felis concolor*) and wolverine (*Gulo gulo*).

The western St.Lawrence Iroquois intensive slash and burn horticulturists will be considered first and then the more equally balanced horticulture and hunting-fishing economy of their eastern kinsmen. Slash and burn horticulture involved the destroying of the forest canopy by girdling the trees to kill them and eventually to fell the larger tree with fire. Once the canopy was removed the corn, beans, and squash could be planted together in small irregular plots among the dead mature trees thus an Iroquoian cultivated field would bear little resemblance to the tilled fields we are used to today. Standing dead trees eventually presented a hazard in the form of falling limbs as is further evidenced by a special midwinter Seneca prayer to protect children from such missiles (Parker 1910:21-22) which was probably a widespread invocation.

The Beckstead village site in eastern Ontario (Pendergast 1984) was the first St.Lawrence Iroquois village site where extensive flotation of pit and defensive ditch soils was employed. Regrettably, this fact was not recognized by faunal analysts who either studied or referenced the collections (D`Andrea et al. 1984:203; Stewart 1999:152). There was abundant evidence of fish, particularly spring spawning species, although American eel (*Anguilla rostrata*) which is most readily captured in the late summer to fall was also well represented. One pit feature contained an abundance of frog bones suggestive of a single processing event while another pit held large quantities of bone among which were animals such as beaver, marten, and fisher and may have been the remains of some ceremonial event (D`Andrea et al. 1984:215).

An increase in the level of sophistication in archaeological faunal analyses has been recently established by Frances L. Stewart (1999). In her monograph on the early 16th century St.Lawrence Iroquois McKeown site (Pendergast 1988) she compared the faunal recoveries from three houses with the faunal evidence from the contemporary Huron village site of Keffer in north Toronto (Stewart 1991; Finlayson et al. 1987). Two weaknesses in this otherwise excellent study are the assumptions that diets can be qualified and quantified on the basis of archaeological recoveries alone and that the McKeown and Keffer samples were, in fact, truly representative of their particular cultural groups. Although Stewart acknowledges the probable effect of off-site food processing on the representativeness of archaeological site faunal samples from village sites, the Schlepp effect, as well as other bone sample altering activities like butchering, processing of products like fat, excavation recovery methods used, and animal scavenging including that of village dogs (Stewart 1999:63-64), she still proceeds on the assumption that past diets can be reconstructed from the bones recovered. This assumption ignores a range of variables which would leave no or little evidence of bone, such as is typical of the processing of most winter storage foods. In this respect she adheres to an assumption held by the majority of archaeological faunal analysts although there are exceptions (Driver 1993). The position taken here is that archaeological samples from sites are not valid representations of once extant diets. Edible greens and tubers and highly processed meat, oil, fat, and plant products no longer exist in the archaeological record. Faunal analyses provide many important insights into past life-ways but diet is not one of them; at least diet in the sense of a totality of the quantities and varieties of foods consumed as well as when and where. For example, calculating meat weights from the minimum number of individual species in a sample in order to judge the extent of meat consumption ignores the impact of food processing away from the main villages where many, if not all of the bones, would remain at the kill site. This is particularly so for highly processed winter storage foods such as dried meat consisting of mammals, fish, and mussels, dried roots and mushrooms, and other such products which would leave no archaeological record. Even a cursory examination of the ethnographic evidence reveals the potential impact on bone recovery of food processing procedures. Some important foods, such as small fish rich in fats like lake herring or ciscos (*Coregonus artedii*), would have been eaten bones and all and, of course, the importance of spring and early summer greens in the diet can never be assessed. Certain other innovative albeit somewhat questionable assumptions have been made by Stewart such as the number of years a village was occupied based upon the post mould densities of longhouse walls. Calculating the number of families living in a longhouse based on central hearth counts, on the other hand, is on an much firmer footing.

At the McKeown village site (Stewart 1999) deer and bear were the most important large animals represented *by bones* followed by fish, particularly spring spawning species like perch and sucker. The distribution of body parts suggest that both mammals and fish were being brought back to the site intact (Ibid: Table 7-10). There are a number of rarely considered factors examined in this report including osteophagia, animal chewing of bones, presumably by dogs (Ibid 79), relevant to cultural taboos bearing on the desecration of certain animal remains. Such investigations need to be expanded to include other identifiable cultural practices possibly relating to taboos. Among these practices are the methods of capture used, such as by entrapment in fish nets and deer pounds versus individual stalking or handline fishing. Among the Huron, for example, the bones of animals recovered by entrapment methods could not be exposed to fire whereas the taboo apparently did not apply to the same species captured by other means. Thus, taboos were not necessarily species specific in an absolute sense. Another consideration is the relationship between nutrition and the contribution of vitamins, minerals, and fat from a range of animal and plant species (Ibid: Table 8-31). Stewart astutely notes the probable food gathering contribution of women as ancillary activities to farming (Ibid 1999:132) such as setting snares and dead falls for crop destructive animals like the woodchuck (*Marmota monax*). Her suggestion that the greater frequency of dental cavities among the Huron compared to the St.Lawrence Iroquois (Ibid 1999:157) reflects a greater reliance on corn by the former, however, suffers from a sampling problem. While the St.Lawrence Iroquois adopted corn later than their Iroquoian neighbours to the west and south the rapidity and intensity of the adoption would have provided sufficient time for the high carbohydrate diet to be reflected in St.Lawrence Iroquois dental health. Also, the suggestion that the St.Lawrence Iroquois consumed fewer dogs than some of their Huron neighbours (Ibid:154) relative to the issue of protein deficiency missed a key point. Dog feasts would have been primarily of ceremonial importance rather than being a simple matter of caloric intake and, therefore, social/political stress levels could be related to the evidence of dog feasting. Another major contribution is the fact that this report brings together a large body of formerly unpublished faunal analyses from other sites (Ibid:147-152).

Although an archaeological faunal analyst by training Stewart reports on the use of plants recovered from the flotated sample from one of the McKeown site houses. In descending order of frequency these included brambles (*Rubus sp.*), grasses (*Gramineae*), chenopod (*Chenopodium sp.*), strawberry (*Fragara sp.*), sumac (*Rhus typhina*), knotweed (*Polygonum sp.*), nightshade (*Solanum nigrum*), panic grass (*Panicum sp.*), purslane (*Portulaca oleracea*), flax (*Linum sp.*), cat-tail (*Typha sp.*), daisy (*Compositae*), and hickory nut (*Carya sp.*) (Steward 1999: Table 8-32, as well as Table 8-33). Table 8-33 provides the carbohydrate, protein, fat, and calories of various plants per 100 grams. The addition of vitamin content of plants would have been useful as it is likely that their caloric value paled relative to their "vitamin pill" nutritional value (Pennington 1975), particularly as a dried winter food. While most of the plant remains pertain to edible berries and greens there was also evidence of medicinal plants like sumac (Moerman 1986). A caution should be made regarding chenopodium as this edible green and seed plant consists of both Eurasian and native species and represents a common recent intrusion into archaeological deposits where its black exterior suggestive of carbonisation conceals the fact that the seeds have not been exposed by fire as indicated by the presence of desicated embryos when broken. Except for cultigens the importance of plant materials in Iroquoian society went largely unrecognized in the 16th and 17th centuries documentation as the records were made by men who were either disinterested or discouraged from discussing plant use with the women. Early records were made by explorers and missionaries who were more interested in numbers of warriors, local resources, and saving souls and not in the gathering and processing of plants by women.

While the storage of animal and wild plant foods for winter consumption would have been important supplements to compensate for the nutritional limitations of stored cultigens, the archaeological evidence of such is simply absent given their highly processed forms as fatty dried meat, animal oils, dried plant tubers, mushrooms and berries. On the Atlantic coast, for example, even though the early European documents clearly describe the importance of dried shellfish meat the archaeological evidence "...will be difficult to discern" (Black and Whitehead 1988:17). Careful examination of soil flotation samples, however, was capable of detecting a hithertofore unrecognized important role of freshwater mussels in the diet at the McKeown site (Wright and Wright 1993). Sixty percent of the pit features of this site contained very small shell fragments generally weighing 1 gm or less. In contrast, at the Steward site, a nearby warm weather fishing camp on the St.Lawrence River, more than 50% of the faunal sample was represented by mussels valves (Junker-Andersen 1988:101). Mussel valves per se are not particularly common on the interior village sites but what was ubiquitous at the McKeown site were the aforementioned very small shell fragments which are interpreted as adhering fragments to the mussel meat dried at the capture site and brought back to the village as a winter food.

The importance of American eel (*Anguilla rostrata*) as a winter storage food was identified in the French documents relative to a number of different native groups including the St.Lawrence Iroquois. This particular fish has the highest fat content of any fish and, therefore, would have been particularly important as a winter storage food which could compensate for an essentially fat-deprived diet of cultigens. It was not until relatively recently that eel remains were being identified in the faunal record (Junker-Andersen 1988). During their down river migration to the sea in late August to early November the adult American eel are most readily captured. They are large fish, being as long as 1.25 m and 7.5 kg in weight. Jacques Cartier recorded that eel and other fish were smoked and stored for winter consumption by the St.Lawrence Iroquois at the village of Hochelaga (Biggar 1924:158). Although a recorded eel processing method pertains to the Algonquian Montagnais if the neighbouring St.Lawrence Iroquois processed and stored eel in a similar fashion the archaeological evidence would be limited. This involved cutting the head and tail off the eel and then slitting it along the back (spinal column removal?) with additional slits to permit smoke penetration (JR 6:311, 313). It is significant that in the faunal collections from the Steward and Driver sites, both seasonal fishing camps on the St.Lawrence River in Ontario, American eel is either the dominant fish species or second only to suckers which interestingly are a spring spawning species (D'Andrea 1984:224). In contrast, eel remains have a relatively low frequency on the interior villages suggesting that processing at the capture site destroyed much of the archaeological evidence. Further, fishing camps were apparently occupied during different times. At the Pointe-du-Buissons site upriver from Montréal, where fish remains dominated the collection, the major species were channel catfish and lake sturgeon, both spring spawners (Girouard 1978), whereas at the Steward and Driver sites upriver in

Ontario both fall (eel) and spring (suckers) spawners dominated. Such differences may reflect the application of different fishing and/or processing methods or the local availability of the different fish species.

In addition to the evidence for the significant use of freshwater mussels as a dried foodstuff at the McKeown site the flotation of 27 tons of pit and defensive ditch soil from the site produced other interesting results (Wright and Wright 1993). While carbonised corn was abundant likely due to accidents during the parching and cooking processes there were much lower frequencies of beans, squash, and sunflower. Succotash, a recipe consisting of various proportions of corn and beans, was represented by a number of large samples up to nearly 290 grams (Wright and Wright 1993:Table 2) perhaps being indicative of feasting. Concentrated bone mash consisting mainly of extensively broken deer skulls and fish remains are interpreted as the discarded remnants of broth production intent on the extraction of all nutrients. The scarcity of fish scales, despite the abundance of fish bones, suggest fish were being skinned at the capture site and likely further processed before being brought back to the village. Norman Clermont (1984) is correct in his assessment that fishing had a long history of importance among the St.Lawrence Iroquois even after the adoption of horticulture. His estimate that between 18% and 30% of flesh consumed was fish is, if anything, conservative given that the sites in question were fishing stations and that processing methods, such as filleting, drying, and smoking, would reduce the archaeological visibility of fish remains. Fish may also have been used as dog food, particularly during times of abundance and would disappear from the archaeological record unless preserved in dog faeces.

Insights into the subsistence practices of the St.Lawrence Iroquois in the Québec City area are confounded by the difficulty in isolating archaeological contexts. The only known hamlet is the upriver Masson site (Benmouyal 1982). While it is mentioned that corn, mammals, fish, and shellfish were present the acid soil conditions resulted in generally poor preservation of organic materials. Down river from Québec City faunal materials have been recovered but here the problem is whether the sites are St.Lawrence Iroquois or Montagnais Algonquian or a mix of the two. Suffice to say that at the Anse-à-la-Vache site on Île Verte on the south shore of the St.Lawrence River opposite the mouth of the Saguenay River this small sea mammal hunting site, dated to AD 900-1300, contained mainly harp seal (*Phoca groenlandica*) and shellfish (*Mya arenaria*) pointing to a spring to summer occupation (Tremblay 1999:85-86). Beaver, moose, dog, and some other terrestrial mammals were also represented as well as beluga whale. No cultigens were found. From another site in the area butternut shells were recovered that must have come from the Québec City region 100 km upriver. These sites are assumed by their excavators to represent the products of St.Lawrence Iroquois seasonal forays down river from the Québec City region (Ibid:93) and are particularly common in the

Tadoussac area at the mouth of the Saguenay River where harbour seal were abundant. In all incidences, the faunal collections are dominated by sea mammals (Chapdelaine 1993a:Table 1) although beaver, Cervidae, and dog are also common.

There is little question that the eastern St.Lawrence Iroquois had access to rich sea mammal and fish resources. There is also little question that they exploited these resources in the full sweep of the southern Gulf of St.Lawrence. Jacques Cartier encountered the Stadaconan St.Lawrence Iroquois from the Québec City area along the easternmost coast of the Gaspé Peninsula where they were fishing for mackerel (*Scomber scombrus*). Atlantic mackerel "...has a high oil content..." and is not available in the Gulf of St.Lawrence west of Anticosti Island but is found along the eastern coast of the Gaspé (Scott and Scott 1988:454). It is increasingly clear that fatty fish like eel and mackerel were being particularly sought by native people and most likely as an critical winter food supplement. Until more demonstrable eastern St.Lawrence Iroquois village sites with good bone preservation are discovered, however, we will remain in the dark regarding their balance of products from the sea with horticulture and other products from the land.

Settlement patterns:

It is not until the 14th and 15th centuries that there is evidence of a major shift in settlement patterns away from the earlier hunting and fishing seasonal camps to ones more characteristic of horticultural villages (Chapdelaine 1993). Evidence from northern New York State (Abel and Fuerst 1999) indicates a similar time frame for major settlement pattern change. Thus, until about two hundred years prior to European contact in the early 16th century, settlement patterns suggest a maintenance of an earlier way of life of life involving seasonal rounds centred on warm weather fishing base camps. It is most likely, however, that a lengthy period of adaptation to a horticultural economy preceded the obvious archaeological evidence of such and that "...the sedentarization of the Iroquoians was slow, discontinuous, and marked by a phase of semisedentariness" (Chapdelaine 1993:200). If the origin hypothesis advocated here is correct and these populations were an offshoot of the same Oak Hill horizon development which gave rise to the eastern Iroquois then they would have occupied northern New York and eventually Ontario and Québec with an already in place horticulturally based settlement pattern of palisaded villages and longhouses. Regardless of origin hypotheses, the 14th to early 15th centuries involved a sudden cultural transformation of the western St.Lawrence Iroquois from hunters and gatherers to incipient horticulturists and, finally, to intensive horticulturists.

The earliest St.Lawrence Iroquois horticultural village which has been described in detail is the Lanoraie site on the north side of the St.Lawrence River down river from

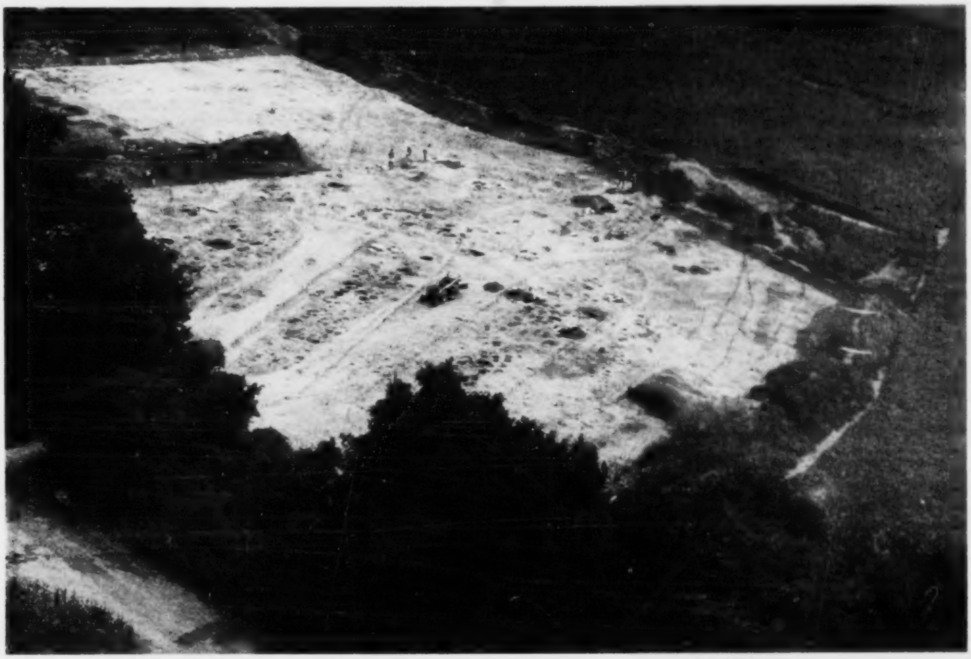
Montréal (Clermont et al. 1983). Wind erosion has destroyed much of the site but sufficient remains to indicate a sizable village associated with a small cemetery. Pottery and pipe styles share much in common with contemporary developments taking place in New York State and leading eventually to the Onondaga (Bradley 1987; Tuck 1971), the Oneida (Pratt 1976), and the Mohawk (Lenig 1965). In contrast to the isolated Lanoraie village the majority of large St.Lawrence Iroquois villages occur in either northern New York State or eastern Ontario. There is no evidence of ancestral sites in Ontario which indicates that the St.Lawrence Iroquois occupation was the product of one or more migrations across the St.Lawrence River from New York State (Pendergast 1993; J.F. Pendergast: personal communication). While there is considerable settlement pattern information from the St.Lawrence Iroquois villages to the north of the River the same cannot be said for the sites in neighbouring New York. In New York State fifty-five village sites have been recorded in Jefferson County on rivers draining into the eastern end of Lake Ontario and the St.Lawrence River with an additional twenty villages in adjacent St.Lawrence County to the northeast (Abel and Fuerst 1999; Engelbrecht et al. 1990:Fig.1). The foregoing site count is exclusive of fish camps and special purpose sites. Settlement was concentrated in the Lake Ontario and St.Lawrence Lowlands and along a local plateau, all areas characterized by heavy snowfalls which would provide moisture advantageous to spring corn planting. Until recently most information pertaining to these sites came from the turn of the 19th century and the early 20th century. Villages ranging from 4.0 to 0.6 hectares have been reported, many surrounded by defensive earthworks and associated with cemeteries and what have been described as ossuaries. Generally sites are situated on well drained loams. A common characteristic of these villages, as with those in Ontario, is a close association with major swamps. Such an association would not only have been useful in terms of the many plant and animal resources in swamps but also as defensive barriers. Too close a proximity to swamps, however, would have called for periodic controlled burn-offs otherwise dried bullrushes torched by an enemy force would have represented a serious defensive liability. That defence was a concern is reflected by the fact that nearly 80% of villages were either surrounded by defensive works and/or were strategically located on defensible topography. While the radiocarbon dated sites in New York all range from the 15th to early 16th century some sites are comparable to the Lanoraie site and should, like the Swarthout site, date to the 14th century (James F. Pendergast: personal communication). It has been speculated that there were at least three major groupings of village sites, each with its own sequence of village relocations (Engelbrecht et al. 1990:75) although others (Abel n.d.:Fig.3) would argue for five such village clusters. As with all Iroquoian villages exhaustion of local resources, such as firewood and, to a lesser extent, soil fertility, and changing political or social conditions eventually led to villages shifting to other locales, generally only a short distance from the older village. Close spacing of approximately 8 km between old and new villages would have accommodated commuting time for the builders as well as the preparation of new fields for the crops which would have had to be in place before the old village population arrived at their new home.

Site information on the New York St.Lawrence Iroquois was provided by E.G. Squier in the mid-19th century and by M. R. Harrington in the early 20th century (Abel and Fuerst 1999; Parker 1922) but village floor plans rarely accompanied the reports. An exception is a 28.9 by 7.6 m longhouse and eight burials recorded by Harrington from the Depauville site. There is a recent brief description of the salvage excavation of the Fort Drum site (McHarque 1998). This early 16th century 0.9 hectare village was surrounded by an earthwork and contained at least five longhouses which could have housed a population of 350. Houses were more or less parallel to one another and approximately of the same size at 60+ by 6 m. It should be cautioned, however, that the preceding longhouse lengths are extrapolations from limited definite floor plan evidence (McHargue1998:Fig.6). If they are accurate then they are more than twice the length of the numerous longhouse floors totally exposed in Ontario and Québec. Openings in the north and east walls of the earthworks are interpreted as entrance ways with the former entrance being associated with a large midden outside of the village. The only other features noted were an undescribed ossuary(?) 30 m to the west of village and a 23 m long line of posts to the south of the village.

In contrast to the situation in New York, in Ontario there are village floor plans of varying completeness for the McKeown (Pendergast 1988), the Beckstead (Pendergast 1984), the McIvor (Wright 1972b), the Roebuck (Wright 1987) villages and the Steward site fishing camp (Wright 1972a). Floor plans also exist for sites in Québec at Lanoraie (Clermont et al. 1983), Mason (Benouyal 1983), and Mandeville (Chapdelaine 1989). Of the Ontario floor plans the McKeown site is by far the most complete. Building stages at this site suggest an original small village which was subsequently joined by another village and then a third. With the addition of the final village instead of simply expanding the defensive works to accommodate the increased population, some of the earlier longhouses were torn down and built over. Such agglutination of small villages to form larger villages is regarded as a defensive strategy during times of increased hostilities. The nearby McIvor site also provided evidence of village agglutination but such was not the case with the earlier 3.2 hectare Roebuck site which appears to have represented a single construction event.

The need for defence by the westernmost Ontario St.Lawrence Iroquois villages was probably the result of a late15th century population migration from New York across the St.Lawrence River into Ontario occupying lands likely claimed as hunting territory by Huron villages to the west. Huron pottery on Jefferson County sites in New York State (J.F. Pendergast, Research Associate, Canadian Museum of Civilization: personal communication)suggests that hostilities between some village groupings of the St.Lawrence Iroquois and the Huron existed prior to the move across the St.Lawrence River. Such a population incursion undoubtedly would have heightened hostilities with the southern Huron tribes who had contemporary villages along the lower Trent River and the north shore of Lake Ontario as well as seasonal fishing camps as far east as Kingston and only 100 km to the west of the St.Lawrence Iroquois sites in Ontario. There is mounting evidence to suggest that the St.Lawrence Iroquois migrations into adjacent Ontario and Québec involved the total abandonment of northern New York State (Abel n.d.; Clermont et Gagné n.d.; Engelbrecht 1993; Pendergast 1993) and, thus, a sizable population was involved which would have certainly posed a threat to neighbouring people.

By far the largest of the St.Lawrence Iroquois villages in Ontario is the 3.2 hectare Roebuck site (Wintemberg 1936). Even for such a large village defence was still a consideration. The site was flanked on three sides by swamps and the connecting dry land isthmus was defended by an earthwork. In addition, multiple stockade lines surrounded the village. It is estimated that the Roebuck site once contained forty longhouses but, unlike the McKeown site, there is no evidence of any village expansion by a process of absorbing smaller villages. This substantial population, estimated to have involved as many as 2,000 people (Wright 1987:57), came in as a single body. Longhouse orientations are essentially random with only a few parallel aligned clusters. Middens tended to be situated around the periphery of the village although some occurred at the ends of longhouses and even outside of the stockades (Wintemberg 1936:end map). The site, one of seven villages in what is called the Prescott cluster, is 13 km north of the St.Lawrence River and at the time of occupation it may even have been surrounded on three sides by open water of the South Nation River rather than swamp. Perennial springs on the margins of the site assured a ready supply of fresh water. Pottery and pipe stylistic trends suggest that the Roebuck site was an initial pioneer village into Ontario, if not the initial one, dating to the 15th century. To the west of theRoebuck site one of its descendant villages, the McKeown site, contained longhouses which ranged from 18 to 42 m in length with widths being consistently 6 m. Exceptions to the foregoing were three houses 7 m wide likely representing chief's houses made larger in order to accommodate ceremonies. Such longhouse measurements are very similar to those from the Roebuck site where house lengths ranged from 16 to 37 m and widths were consistently 6 m wide (Wright 1987). While there has been an attempt to estimate the duration of a longhouse occupation on the basis of the density of wall posts (Warrick 1988; Stewart 1999:99,115-116) such calculations are suspect. It is difficult to envision how one goe about replacing or reinforcing wall posts to which the bark sheathing is lashed withou tearing the entire outside of the structure down. In addition, the cedar poles believed to have been used in wall construction are capable of resisting rot in the ground for more


'A' ↗
↘ 'B'

COLOUR PLATE XXII: TWO AERIAL VIEWS OF THE McKEOWN SITE EXCAVATION 'A' is an oblique view of the site part way through the excavations. Longhouse outlines, demarcated by post moulds, can be seen. Less obvious are the palisade line of the initial village and later houses overlapping earlier houses which had been torn down. Such details can be seen on Fig.114. At the far right the multiple stockade lines can be seen as well as two broad, dark bands which are the barrow ditches from which the defensive earthworks were constructed and have subsequently filled with midden debris. The original earthworks would have been levelled by ploughing. Such sophisticated and substantial earthworks are typical of frontier villages facing an enemy; in this case Southern Huron Division villages 140 km to the southwest. View 'B' is a vertical view of the central portion of the preceding photograph. The white coloured items are plastic bags filled with cultural matrix to be subsequently flotated for micro and macroscopic items. (Photographs provided by Dawn M. Wright. Scale can be judged by the size of the excavators relative to features and the Bobcat tractor).

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than forty years thus raising a query regarding the necessity of replacing wall posts in the first place. Variables to be considered regarding three dimensional longhouse construction include archaeological floor plans, French and Dutch eye-witness descriptions, building materials most likely used in the construction, and the Huron words for various structural elements of the longhouse (Wright 1995a).

This is an appropriate place to comment on the results of a massive, albeit incomplete, study carried out on McKeown site flotated feature contents which has contributed new insights into aspects of settlement patterns. Twenty-seven tons of pit and defensive ditch soil samples from more than 1,000 features not processed on site were subsequently processed by flotation (Wright and Wright 1993). Not only were facets of technology revealed, such as a simple expedient stone flake industry and fish bone tooth brushes, but the study also provided insights bearing on activities carried out during both cold and warm weather months. Cosmological aspects, food recipes, and other evidence of human behaviour were identified suggesting that pit contents can provide information not only into economic activities but are also relevant to social and religious activities. Materials associated with house pits were assumed to pertain mainly to cold weather activities adjacent to the central hearths and included abundant bone and antler tool production detritus, fragments of beaver incisor knives, and small stone flakes with the latter two items being bone and wood working tools. Small mussel shell fragments, generally less than a gram in weight, were interpreted as fragments adhering to dried mussel meat being consumed in the winter. Charred bone awl tips possibly reflect the roasting of skewered meat over the fires. Soapstone beads in lieu of any manufacturing debris were most likely lost items. Dense bone mash composed mainly of deer skulls and fish remains were probably the waste debris from a boiling process

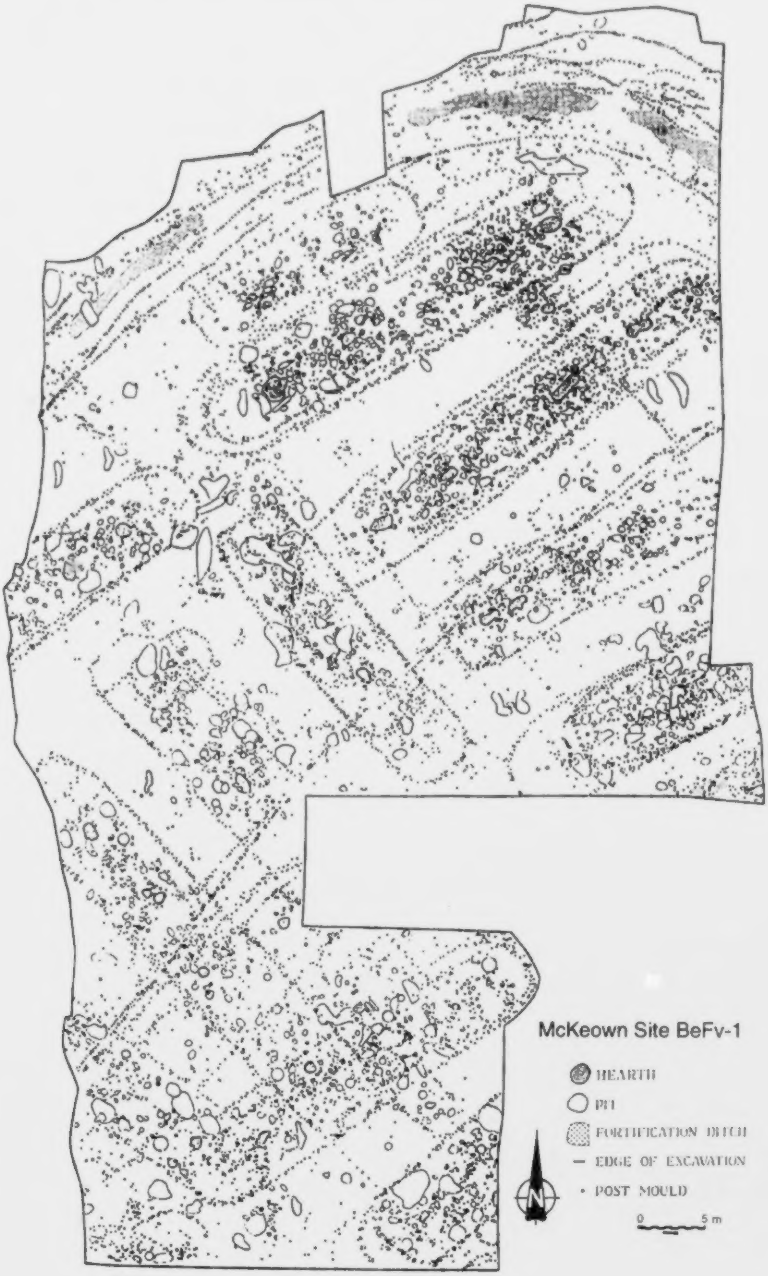

McKeown Site BeFv-1
HEARTH
PIT
FORTIFICATION DITCH
EDGE OF EXCAVATION
POST MOULD
N
0
5 m

FIGURE 114: FLOOR PLAN OF THE McKEOWN VILLAGE SITE This partial floor plan of the McKeown village central area illustrates the overlapping longhouses as well as the defensive ditch remnants which would have been adjacent to elevated earthworks containing stockade posts. The single stockade line that cuts through the centre of the excavation and bisects a number of houses was probably the northern defences of the small original settlement. Although not apparent in this floor plan the final village was surrounded by two defensive earthworks associated with additional flanking stockade lines. Such heavy defences likely relates to the fact that the site was a frontier village facing two contemporary enemy Huron village clusters near the north shore of Lake Ontario 140 and 300 km to the west, respectively. These Huron villages were also characterized by massive defences. Two small 6 by 5 m structures overlayed by subsequent longhouses to the left centre of the floor plan, interpreted as sweat lodges (Pendergast 1988:23), may actually be attributable to a limited Period IV Point Peninsula complex occupation of the same site. Typical end cubicles are apparent for most of the longhouses. (Reproduced with permission from Dr. James F. Pendergast 1988).

intended to remove any remaining fat for soups. The aforementioned toothbrushes were large fish ribs chewed at one end to produce a brush similar to that of the twigs the author has seen being used by the Cree after a meal. Diseased adult teeth found in pits were probably being hidden to prevent an enemy using them to hex the original owner. One of the important benefits of a detailed analysis of pit contents, both macroscopic and microscopic, is that these remains represent the final function of most pits and some of the activities surrounding them (Wright and Wright1993:4-6).

Another village site in eastern Ontario intermediate between the two major clusters of villages centred on Cornwall and Prescott is the15th century Beckstead site 10 km north of the St.Lawrence River (Pendergast 1984). Salvage excavation along the highway edge of the site and strategic trenching revealed a 1.2 hectare village on a low knoll surrounded by a single defensive earthwork. Ploughed for many years, all that remains of the earthwork today is the adjacent barrow ditch. Evidence of stockade lines set in the earthwork would have also been destroyed by ploughing but a remnant of a stockade was uncovered behind the defensive trench suggesting that the ditches were likely a part of the outer defences. Four partially exposed houses were, unlike the Roebuck site, all parallel to one another but in groups of two separated by a 28 m gap (Ibid:Fig.1). The site is adjacent to a small creek and in close proximity to swamps. An unusual feature probably required by the heavy glacial till underlying the thin sandy loam layer was a drainage ditch 60 cm wide that ran out of the village and into the defensive ditch (Ibid:11).

Despite the number of excavated western St.Lawrence Iroquois longhouses none come close to approaching the great lengths of contemporary Ontario Iroquois or

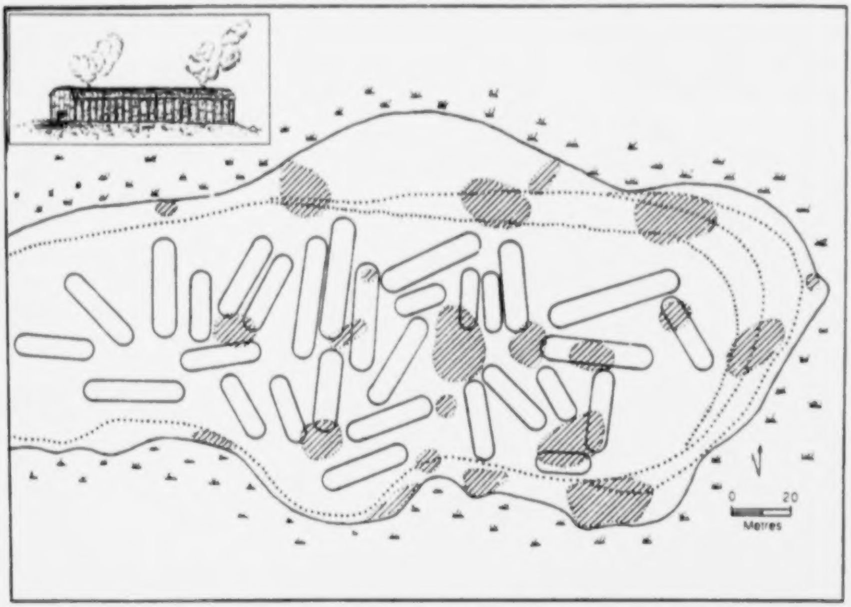


FIGURE 115: A SCHEMATIC FLOOR PLAN OF THE ROEBUCK VILLAGE SITE AND A THREE DIMENSIONAL SKETCH OF A LONGHOUSE The floor plan of the village is based upon extrapolations from Wintemberg's excavations (Wintemberg 1936) and salvage work carried out by the author (Wright 1987) and is nearly complete except for its western extremity which was destroyed by a highway. Earlier records indicate that at the westernmost dry land approach to the village there once was a defensive earthwork; a structure otherwise not in evidence around the rest of the site. Stockades are represented by dotted lines, middens or garbage dumps by stippled areas, and longhouses are outlined. The estimated forty longhouses could have accommodated 2,000 or more people. Note the peripheral distribution of the middens and the relatively random orientations of the longhouses. The three dimensional sketch of a longhouse is adapted from an scale drawing which appeared on a 1740 French map of Fort Frontenac located at the eastern end of Lake Ontario. The longhouse likely pertains to an Oneida settlement around the Fort as illustrated in a floor plan on the aforementioned map. Such rare to scale and detailed sketches help to convey an impression of the size and form of these large, multi-family dwellings. (Adapted from Wright 1976, Figure 19).

Onondaga longhouses. A house at the Moyer site near Waterloo, Ontario, for example, measured 93.3 by 8.4 m (Wagner et al. 1973) and an ancestral Onondaga site, Howlett Hill, had a longhouse that measured 102 by 7 m (Tuck1971:79). Presumably the social factors which required these extended lineage or possibly clan segment residences did not take hold among the St.Lawrence Iroquois where house lengths tend to be, on average, in the 30 m range.

The only special purpose sites are fishing camps adjacent to or in close proximity to the St.Lawrence River. It is possible, however, that the settlement of Crystal Rock (Pendergast 1962), partially destroyed by wind erosion, actually represented a small farming hamlet affiliated with one of the nearby larger villages. Typical warm weather seasonal fishing camps in Ontario are the Steward and Driver sites (D`Andrea et al. 1984). Similar sites further east along the north shore of the St.Lawrence River, for instance the Aultsville and Santa Cruz sites, have now been inundated by the St.Lawrence Seaway. Other sites exist on the islands in Lake St.Francis, a widening of the St.Lawrence River down river from Cornwall (Pendergast 1964). All of these sites are in close proximity to major village sites.

The Steward site excavations not only revealed a stratified midden, indicative of seasonal use over a considerable period of time, but also longhouses that differed significantly from those of the interior villages. Located only 10 km south of the Beckstead village site it may have been associated (Pendergast 1984:225). Similarly, the Driver site to the east of Prescott is 6 km and 14 km southeast of the Crystal Rock and Roebuck sites, respectively, and 12 km east of the McKeown site. Faunal recoveries indicated that these sites were seasonal fishing and gathering locales; particularly oriented to eel, suckers, and mussels. The two longhouses partially exposed at the Steward site were of particular interest (Wright 1972a). The most completely exposed house (see Figure 116) was 30.5 by 7.6 m, contained a single central hearth, and an estimated total of fifty pits. Along both sides of the dwelling 1.2 m wide bunk lines were recorded. The Steward site house is much wider than typical longhouses in the interior villages and contained far fewer pits. A "... calculation of square feet of house floor space per pit is as follows: Roebuck: 12.9; McIvor: 13.8; and Steward: 50.0" (Ibid:7). The other house, where excavations were limited to demarcating its outline, measured 50 by 9 m. Such commodious structures suggest that heating was not a concern unlike with the interior village dwellings. Large structures would probably have functioned as convenient fish drying and smoking sheds during wet weather. Two graves, one containing the remains of two foetuses, possibly twins, and another containing an infant approximately three months of age, were encountered. The burial of young infants within the confines of the longhouse was a common Huron and Neutral Iroquoian practice attributed to a belief in the transfer of the infant's soul into the body of another woman, thereby providing it with another chance at life. Another probable fishing camp site in Ontario, but somewhat different from either the Steward or Driver sites, is the MacDougald site (Pendergast 1969) located 2 km inland from the River on top of a rock strewn ridge adjacent to a pond and on the same drainage as the large Salem village site 2.5 km away. The site covered approximately 0.5 hectare and had a shallow midden rich in fish and mussel remains. Other animal bone was scarce although carbonised corn was present.

When compared to the concentrations of large horticultural villages in both eastern Ontario and northern New York, the situation in Québec presents a paradox. Until recently the 14th century Lanoraie site down river from Montréal was the only site equivalent in size to sites further west and south. This site sits 1 km back from the St.Lawrence River and although largely destroyed by wind erosion occupied at least 1.4 hectares. Unlike the more westerly sites, however, it is considerably older and exhibits many similarities with contemporary sites in New York State that gave rise to the Onondaga, Oneida, and Mohawk. That sites contemporary with the more westerly villages and of equivalent size existed in Québec is clearly evident from Jacques Cartier's AD 1535 description of the village of Hochelaga on the Island of Montréal (Biggar 1924; Cook 1993). Cartier visited a village two or more leagues inland from the River with outlying corn fields which was circular in plan and surrounded by a palisade "two lances high" and supplied with stone missiles to fend off attackers. There was a single entrance way into this village of about fifty houses. Cartier also mentions the production of corn flour in wooden mortars, the baking of corn bread on hot stones, the use of corn and beans in soups as well as other cultigens, and the storage of smoked eels and fish in large vessels for winter consumption. His description clearly pertains to a large St.Lawrence Iroquois village but no site even approaching this early 16th century description has ever been uncovered in Québec. The remnants of a St.Lawrence Iroquois site in the centre of Montréal, destroyed in 19th century by sand removal, was once thought to be that of Hochelaga but may actually represent the remains of a sister village (Pendergast and Trigger 1972). The situation regarding large horticultural villages in Québec changed in the late 1990's with the discovery of a small cluster of sites on the southern headwaters of the Rivière la Guerre which empties into the south side of Lake St.Francis approximately 70 km west of Montréal (Clermont et Gagné n.d.; Gates St-Pierre 2001; Tremblay 2001). Unlike the majority of St.Lawrence Iroquois sites the St-Anicet cluster, consisting of one large village, two hamlets, and some smaller settlements, occur on the crests of rocky drumlins. While longhouses are inferred from lineally aligned hearth floors post demarcation was so poor that house walls could not be traced. The occupation is believed to span the period between AD 1300 and 1500 and given this time depth there must be undiscovered villages in the area although no settlements are recorded from the surrounding flat lands. Pottery and pipe styles, the weak lithic assemblage, the developed bone tool industry, and the presence of corn, beans, squash, and sunflower, closely follow St.Lawrence Iroquois patterns. Pottery attribute frequencies and the dominance of trumpet and scarcity of effigy pipes, however, make the St.-Anicet cluster somewhat distinct from other site clusters. The very recent discovery of this cluster of sites south of Lake

St.Francis raises a caution flag that our knowledge of the entire record of once extant villages is far from being complete. Paradoxically one of the small settlements in the cluster was recorded in the 19th century but had to wait until Norman Clermont discovered it in the literature (Sellar 1888:224) and Michel Gagné in the field. A detailed description of the sites should appear in the near future. In the meantime there are articles on the pipes (Tremblay 2001) and bone tool industry (Gate St-Pierre 2001).

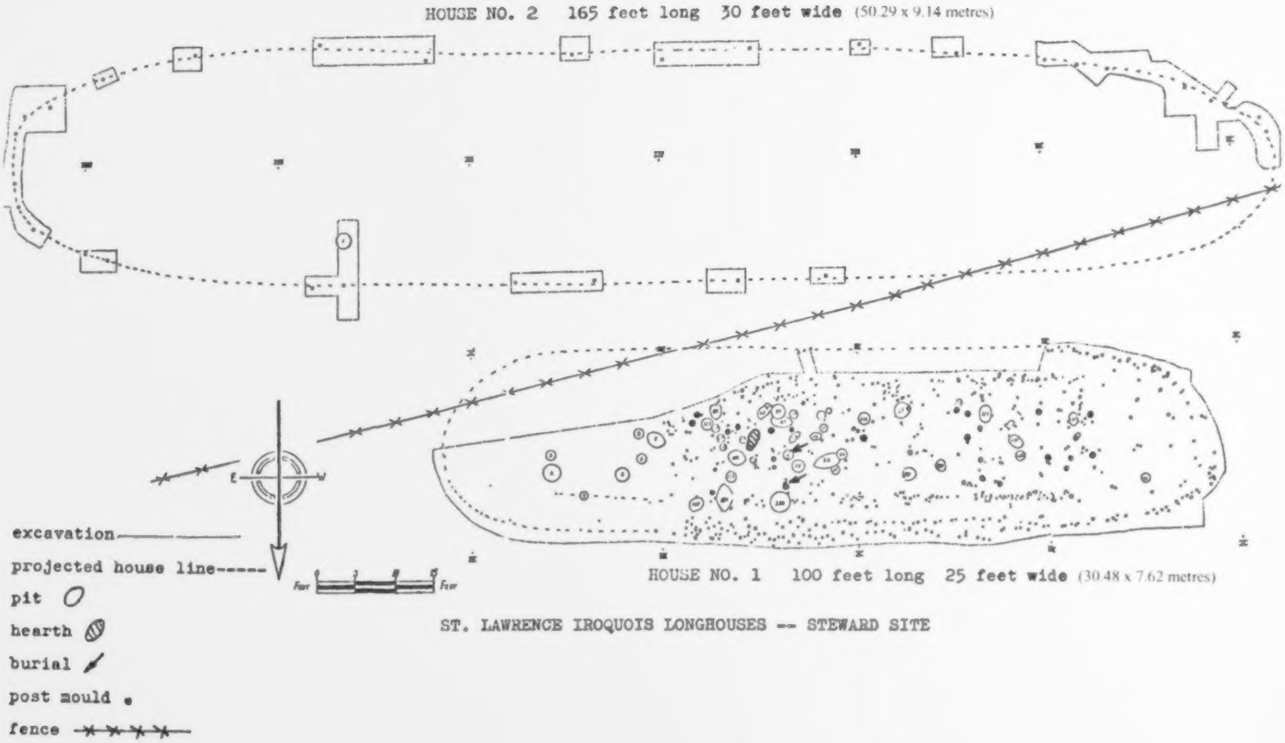
It has been argued that the Mandeville site on the Richelieu River represented a year-round occupied horticultural village (Chapdelaine 1989; 1990). The site covers one hectare and sits on a well-drained elevated bank of the River. Five longhouses have been demarcated as well as a nearby small cemetery. This writer is not as sanguine concerning the Mandeville site being a horticultural village as opposed to a seasonal fishing camp, albeit a large one. For one thing, the high frequencies of juvenile ceramics and pottery wastage from the site are more characteristic of warm weather seasonal fishing camps. Pottery pipes are also exceedingly abundant relative to their occurrence on interior village sites, a number of which could be classified as juvenile pipes and, in conjunction with the juvenile pot fragments and pottery wastage, would reflect the activities of women and children at seasonal fishing camps as noted elsewhere (Wright 1972). One must also wonder at the complete lack of defensive considerations for a site situated on the bank of a major river draining north from traditional League Iroquois territory. Indeed, the Richelieu River was once known as the River of the Iroquois and was one of two major raiding routes of the eastern Iroquois into the upper St.Lawrence in the first half of the 17th century (Heindenreich 1987a:Plate 35). Evidence of conflict in the form of either alien pottery or cannibalized human bone is also absent. In addition, all of the Mandeville longhouses are of relatively flimsy construction compared to those of the interior villages and contain a paucity of interior feature which contrasts with the abundance of features outside of the houses. In all of these respects they resemble the fishing camp longhouses of the Steward site (Wright 1972a:Fig.1). Difficulties in attempting to define comparative patterning of the pottery from the site could relate to the pottery being the product of a number of different temporal components as is also suggested by the wide ranging radiocarbon dates (Chapdelaine 1989:Tableau 5.2). It should be noted that the Mandeville site is only a three day canoe trip from Montréal and, at the same time, represents the only known site of its kind on the Richelieu River outside of small campsites at the River's embouchure from Lake Champlain of questionable ethnic assignment. It is suggested here that the Mandeville site is not a year-round occupied horticultural village and, therefore, cannot be used to support the existence of a distinctive regional cluster as proposed by Claude Chapdelaine. For an opposing view to the seasonal fish camp explanation preferred here see Chapdelaine (1989:126-127).

The Pointe-du-Buissons 4 site overlooking a rapids in the St.Lawrence River upriver from Montréal was a fishing camp with a long history but was used mainly between AD 500 and1000. Pottery from this time period reflects the transition out of the earlier Point Peninsula complex (Clermont et Chapdelaine 1982; Gates St-Pierre 1999). Like the Mandeville site there was an exceptionally high incidence of juvenile pottery and pottery wastage relative to mature pottery vessels. The Bilodeau site is another multi-component seasonal camp on the first rapids of the Pike River approximately 15 km east of the Richelieu River where it drains out of Lake Champlain (Blais 1993). A small oval 7 by 4 m structure with a central hearth was outlined by post moulds. Stone tools, mainly triangular arrowheads, end and random flake scrapers, wedges, and drills were manufactured from local stone and the pottery vessels, as determined by neutron activation analysis, were manufactured from local clays. The stone tool industry does not resemble either that from St.Lawrence Iroquois horticultural sites like Lanoraie or, quantitatively, a major fishing camp site like Mandeville (Chapelaine 1989:Tableau 7.24) and raises the problem of identifying ethnicity from archaeological materials. Is the Bilodeau site a bona fide St.Lawrence Iroquois fishing camp or could it be a western Abenaki Algonquian occupation? There is no reliable documentation of the Abenaki on Lake Champlain until the late 17th century. However, toponymy and oral tradition would suggest a long occupation along the east side of the Lake (Day 1965; 1971). It has been speculated that the northern end of Lake Champlain was shared by the St.Lawrence Iroquois and the Abenaki (Pendergast 1990a; St.Arnaud et Chapdelaine 1996). The fact that the stone tools and pottery from the Bilodeau site were all manufactured from local materials would tend to favour an Abenaki relationship for if the site was the product of seasonally transitory St.Lawrence Iroquois from further upriver one would expect to see at least some introduced exotic stone and pottery from the north.

The settlement pattern contrasts between the St.Lawrence Iroquois sites100 km to the east of Montréal and sites to the west is striking. The eastern sites are either small, unpalisaded hamlets or, more frequently, seasonal fish camps. There are clearly two major regions of St.Lawrence Iroquois culture represented by this east-west split and others would argue for the addition of a third central region (Chapdelaine 1990:Fig.3). Given the more than 500 km between the eastern shore of Lake Ontario and the Québec City region considerable variability could be anticipated. Early in the 16th century St.Lawrence Iroquois seasonal forays to the Atlantic Ocean were noted by Jacques Cartier. Seal appeared to have been of particular importance (Martijn 1990). While there is debate whether the people encountered in the Strait of Belle Isle between Labrador and Newfoundland were St.Lawrence Iroquois rather than Montagnais or Boethuck there a definite record of a St.Lawrence Iroquois fishing party in the Baie de Gaspé at the eastern end of the Gaspé Peninsula 600 km east of their home village in the Québec City region (Biggar 1924:60-67). Even though Cartier noted corn being grown along the north side of the St.Lawrence River a short distance down river from Québec City it appears that the eastern St.Lawrence Iroquois relied more on hunting and fishing than their western kinsmen. On this point, it has been suggested that "...ils pratiqueraint alors une véritable économie de transhumance qui les distinguerait des autres Iroquoiens" (Chapdelaine 1998:87). Further, as has been eloquently observed regarding the eastern St.Lawrence Iroquois, they did not exclaim "Adieu orignaux, esturgeons et tourterelles! et Bénis soient le maïs, les haricots et les citrouilles" (Clermont 1989:121).

The only excavated single component, year-round occupied horticultural site in the eastern region is the Masson site 50 km upriver from Québec City on the north side of the River (Benmouyal 1983; Chapdelaine 1993a:9). Though partially destroyed the village appears to have consisted of four to five longhouses situated on an elevated ridge 1.2 km back from the St.Lawrence River. It is estimated to have been occupied by between 120 and 200 people with the thin archaeological deposits suggesting a relatively brief occupation. One clearly demarcated longhouse measured 24 by 6 m while the others were aligned in a parallel fashion 6 m apart. On the northeastern periphery of the site an oval structure 8 by 4 m contained a dog burial and may have represented a ceremonial structure. Corn was present as carbonised fragments and the pottery vessel motifs are similar to those recorded from the Roebuck site in eastern Ontario (Dr. James F. Pendergast: Research Associate, Canadian Museum of Civilization, personal communication). Unlike the Masson site, the St.Lawrence Iroquois occupation of the Place-Royale site in Québec City could not be separated from the more than 1,500 years of occupational debris mainly dating prior to AD 1200 (Clermont et al. 1992).

While most Québec archaeologists have attributed the seasonal, multi-component hunting and fishing camps down river from the Québec City region, particularly around the mouth of the Saugenay River, to the St.Lawrence Iroquois there are reasons to question this ethnic identification. There are reasonable grounds for suggesting that many, if not the majority, of these sites actually pertain to the Algonquian-speaking Montagnais. If, on the other hand, the camp sites are indeed the product of St.Lawrence Iroquois seasonal forays then there is the likelihood that Iroquoians and Algonquians cannot be differentiated from one another in this area on the basis of either technology or subsistence. For example, the evidence from the Anse à la Vache site on Ile Verte on the south shore opposite the mouth of the Saugenay River has been interpreted as representing a long period of St.Lawrence Iroquois exploitation of the St.Lawrence estuary (Tremblay 1998). While the pottery exhibits similarities with early Owasco-like pottery to the west, the stone and bone tool assemblage, as well as the settlement pattern and subsistence, share most features with contemporary Montagnais sites further east in the Mingan area who also used similar pottery styles (Lévesque 1971). The stone and bone tools from these estuary sites are also different from those characteristic of the


HOUSE NO. 2 165 feet long 30 feet wide (50.29 x 9.14 metres)
HOUSE NO. 1 100 feet long 25 feet wide (30.48 x 7.62 metres)
E
W
excavation
projected house line
pit
hearth
burial
post mould
fence

ST. LAWRENCE IROQUOIS LONGHOUSES -- STEWARD SITE

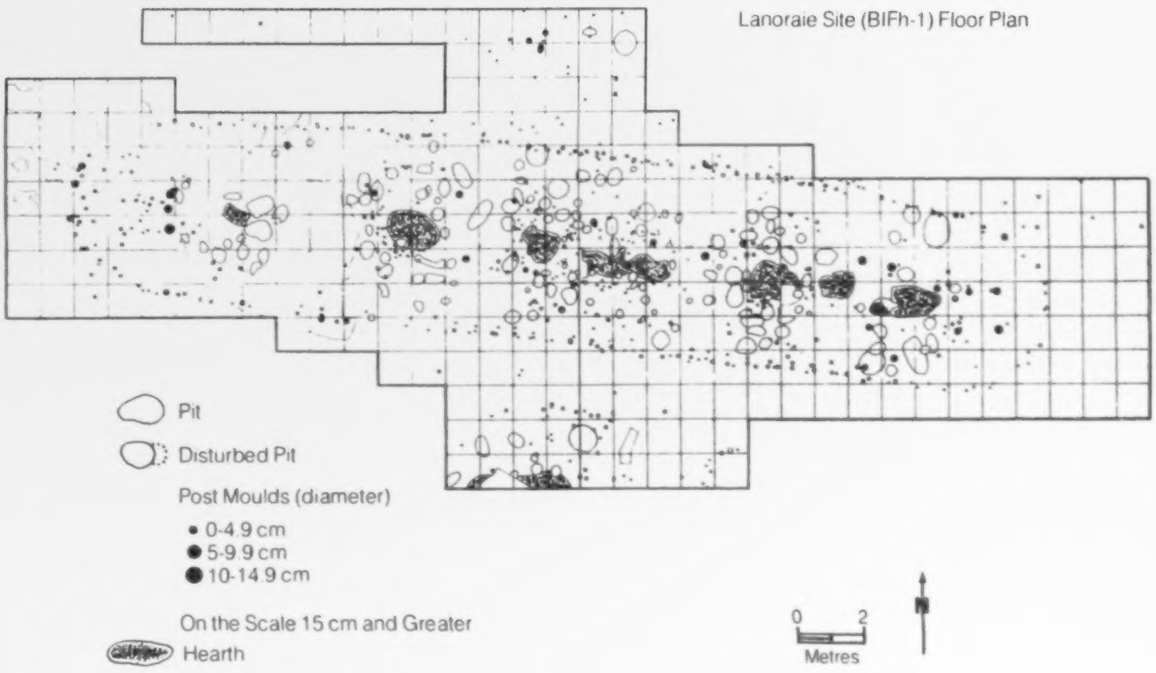

Lanoraie Site (BlFh-1) Floor Plan
Pit
Disturbed Pit
Post Moulds (diameter)
0-4.9 cm
5-9.9 cm
10-14.9 cm
On the Scale 15 cm and Greater
Hearth
0
2
Metres

FIGURE 116: THE LANORAIE SITE LONGHOUSE FLOOR PLAN COMPARED TO THE FISHING CAMP STEWARD SITE LONGHOUSE FLOOR PLAN In all respects the Lanoraie longhouse is similar to other St.Lawrence Iroquois year-round occupied longhouses with its line of central hearths, cubicles at either end of the house, pit features massing around the central hearth floors, and its overall dimensions. Contrast it with the scarcity of central hearth floors, the excessive house widths, and the paucity of interior pit features of the Steward site longhouse. (Lanoraie site floor plan reproduced from Wright 1979:Figure 14 and the Steward site floor plan reproduced from Wright 1972a).

western St.Lawrence Iroquois sites. A laudable effort to fingerprint clay and stone types to source using neutron activation and other methods capable of determining chemical composition (Chapdelaine et al. 1995) has produced mixed results and has been unable to differentiate between presumably introduced Iroquoian and local Algonquian pottery. While granting that the St.Lawrence Iroquois were composed of a number of regional groups functioning within a broad interaction sphere (Chapdelaine 1995a:Fig.3) there are still serious problems involved in distinguishing between Iroquoian and Algonquian campsites in the east. Settlement patterns as it relates to house structures may represent the key in identifying a St.Lawrence Iroquois occupation from a Montagnais one. At the Masson site, an accepted St.Lawrence hamlet, the poorly defined longhouses tended to be 6 m in width (20.0 feet) (Benmouyal 1983), a fairly consistent width for the westerly St.Lawrence Iroquois longhouses, but at the multi-component Royarnois site down river from Québec City at Cap Tourmente the equally poorly defined longhouses were at least in two instances 9.5 m (ca 30 feet) in width (Chapdelaine 1993b). I agree with Chapdelaine's speculation that the Royarnois site was likely a seasonal settlement focussed on fishing and marine mammal hunting and as a stop-over for travel to the east. The exceptional width of the longhouses is similar to that of the fishing station at the Steward site near Prescott, Ontario (Wright 1972a) and may have assisted the drying of fish during inclement weather. The lithic assemblage is another matter. There would appear to be serious difficulties in distinguishing between St.Lawrence Iroquois and Montagnais on this basis. Identifying the maritime adaptation and seasonal transhumance of St.Lawrence Iroquois does little to resolve the problem of distinguishing between Iroquoian and Algonquian exploitation of the same regions; particularly if they should be sharing a similar technology in order to carry out similar tasks.

It is significant in terms of the dramatically different east-west St.Lawrence Iroquois settlement strategies that the seven Stadaconan villages recorded by Jacques Cartier stretched along the north side of the St.Lawrence River for nearly 100 km, most being spaced 20 km apart (Trigger 1987:Plate 33). This stands in marked contrast to the clustered villages to the west suggesting that, for the eastern St.Lawrence Iroquois, defence was not an overriding consideration requiring the protective clusterings of villages characteristic of the west. The ease of water transport and the emphasis on hunting and fishing undoubtedly influenced the more dispersed nature of settlement in the east. Location of villages only along the north side of the St.Lawrence River, however, does suggest that permanent settlement along the south shore was not deemed safe; a probability reinforced by Cartier's documentation of hostilities with the Toudamans, probably the Maliseet and/or Micmac (Trigger and Pendergast 1978:357) who had ready access to the St.Lawrence River from the Maritimes by either the St.John River or the Gulf of St.Lawrence.

Cosmology:

Under most circumstances archaeological insights into the realm of cosmology are speculative. Certain areas of human behaviour, however, do leave a record. Such areas include burial practices, artifact caches, objects manufactured from human bone or a particular animal species, the treatment of the discarded remains of food animals, certain varieties of minerals, and human and animal effigies portrayed in pottery and stone.

The St.Lawrence Iroquois buried their dead, or a portion of their dead, within the confines of the village. Young infants and foetuses are frequently found in graves inside the longhouses adjacent to the central hearths, a practice likely related to the belief that with such close proximity to the living the soul of the deceased child could more readily enter the womb of a passing woman and thus an opportunity to be borne again. Bizarre burial situations have been noted. Of the eighty-four burials from the Roebuck site excavations (Wintemberg 1936) forty-three were adults but thirty-nine or 90% of these were women (Knowles 1937:10). The speculation that these Roebuck women and their children were slaves, and, therefore, provided with a less formal burial (Pendergast 1990:24) does not accord with documented Iroquoian cultural practices nor burial evidence from other St.Lawrence Iroquois sites. The foregoing, of course, still does not address the question of where were the men of the Roebuck site buried? At the Mandeville site on the Richelieu River a small cemetery of five graves 4 m from a longhouse contained five men, a woman, an adolescent and an infant. Another woman was buried in one of the nearby longhouses (Chapdelaine 1989:112-113; 1990:57). At the Beckstead site (Pendergast 1982) a juvenile was buried in one house, two infants, an adolescent, and an adult in another, an infant and an adult in a shared grave, and a child burial in yet another house. In a open area between houses where four of the five adult burials outside of the houses were located there were three large empty pits interpreted as prepared graves which were never used (Ibid:27). In all cases, bodies were placed in a flexed position with no apparent orientation relative to the cardinal points. Occasional bundle or incomplete burials, such a skull or a skull and a few other bones, have also been recorded. In most instances burials occur in separate graves although double and even triple interments have been recorded. Grave offerings are, as a rule, absent except in rare instances such as a pottery vessel placed in one of the Roebuck site graves (Wintemberg 1936:Plate XI). Small rock slabs occasionally cap a grave.

In northern New York one of the few early scientific investigations involving St.Lawrence Iroquois burial practices was carried out at the Heath site by M. R. Harrington for the Peabody Museum of Harvard (Harrington in Parker 1922:315-339). At this site the thirty-two people placed in twenty-seven graves represented both adult men and women with one-third being children. All were placed in a flexed position except for a single bundle burial. Other than a bone necklace associated with an infant and a covering of stone of an adult and infant burial, grave offerings were absent. At another site a cemetery is stated to have been situated on a terrace immediately below the village site. Ossuaries have been described from New York as being six to twelve foot square pits four feet deep. While some archaeologists have accepted the 19th and early 20th century statements regarding the presence of communal grave pits among the St.Lawrence Iroquois (Pendergast 1990:24-25) there is still no archaeological confirmation. Given the frequency with which such "bone pits" were accidentally encountered throughout Huronia and Neutralia during early European farming activities it is difficult to explain their apparent absence or scarcity in St.Lawrence Iroquois territory if, indeed, the early reports by non-archaeologists from New York State are accurate descriptions of what was actually encountered. By "ossuary" I am referring to the mass burials of secondary or bundle burials removed from the cemetery for final internment in a common grave and not to multiple, primary burials placed in a single grave pit.

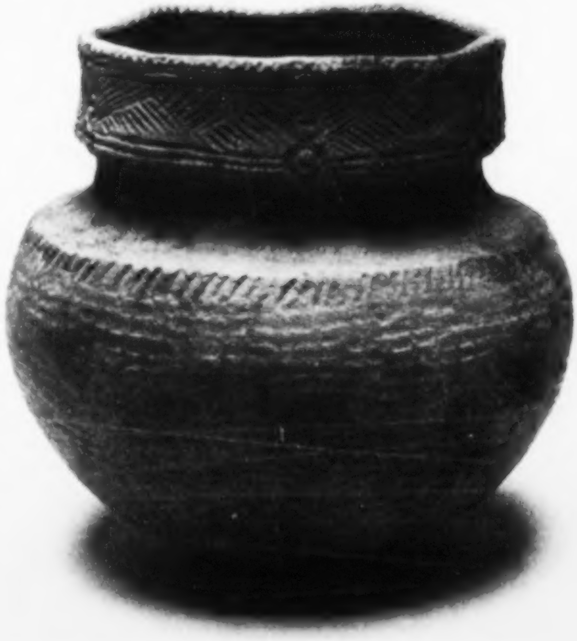
Dog burials are a rare occurrence on St.Lawrence Iroquois sites. One apparently associated with a ceremonial structure has been reported from the Masson site outside of Québec City (Benmouyal 1983) and there is a hearsay report of a human and dog being buried together at the Roebuck site (Wintemberg 1936:114). An immature bear burial, bearing cut marks but no bone breakage, has also been reported from the Beckstead site (Pendergast 1984:212-213; Stewart 1999:111) and would represent the remains of a bear feast requiring subsequent burial of the remains.

Artifact caches can represent some form of ritual behaviour. In a house pit at the McKeown site a pottery vessel had been placed inside of a larger vessel. Another house contained the articulated two human skull discs of a rattle. The most complex of these caches at the McKeown site with an array of buried items recovered from a small pit within a house (Colour Plate XXIII). Two more or less complete pottery vessels were found in house pits at the Beckstead site (Pendergast 1982) and an elaborately decorated vessel came from one of the graves at the Roebuck site (Wintemberg 1936:Plate XI). An unusual cache, consisting of a number of paired deer humeri with holes burned and punched through their proximal ends, was also encountered at the McKeown site (personal observation). Similar objects occurring in twos, a common element of these caches, was likely of symbolic significance. Among the Huron, for example, the number two has been documented by the French as being associated with creation and ceremony (J. Wright 1999:87-93). Some of the caches, like the aforementioned perforated, paired deer humeri, were pan-Iroquoian in nature as evidenced by a virtually identical cache from the late 13th century Uren site in Ontario west of the Niagara Escarpment (M. Wright 1986). Finally, a weasel snout recovered from a pit at the McKeown site may represent the remains of a medicine bundle (Wright and Wright 1993).

Implements manufactured from human bone would have been imbued with symbolic significance. Rattles made from human skull discs, commonly called gorgets, have been recorded from a number of sites. Such objects likely were equated with power (Chapdelaine 1989:Fig.11.23) rather than simply being war trophies. Daggers formed from the human ulna, one of the forearm bones, as well as beads and other items manufactured from human bone, have also been noted. When sex and age can be attributed to the skull and long bone specimens they are most often adult males. For a detailed consideration of modified human bones, both in the form of artifacts and fragments with butchering cut marks, attributed to prisoner sacrifice and cannibalism at the Roebuck site see J. B. Jamieson (1983). Human remains would have been objects of power and of potential danger and, therefore, there had to be some unknown cultural factor which resulted in an abundance of such remains at some sites and their absence at neighbouring contemporaneous villages. Such village differences in the frequency of cannibalized human bones suggests the existence of some community protocol which determined in what village or villages the ceremony of prisoner-sacrifice took place. For example, while there was an abundance of scattered, broken, burnt, and dog-gnawed human remains from the middens at both the Roebuck and McIvor sites, at the nearby and extensively excavated McKeown site such remains were extremely rare (Stewart 1999:Table 7-5).

Smoking pipes were used for religious purposes rather than simple pleasure although one can suspect that the latter function was also involved. Attempts to unravel the significance of Iroquoian effigy pipes and other pipe forms, however, have been fraught with difficulties (Mathews 1981a; Noble 1979). As has been noted a number of times, the variety of tobacco smoked in eastern North America, *Nicotina rustica*, had a much more potent hallucinogenic effect than the currently used introduced South American species *Nicotina tabacum*. An induced trance-like state was essential when attempting to communicate with supernatural powers. A culturally distinctive St.Lawrence Iroquois object is a pipe manufactured from a deer shoulder blade. The dense bone of the scapula's glenoid fossa, the socket into which the upper foreleg (humerus) fits, was cut away to varying degrees in order to expose the spongy interior bone to form a pipe bowl. The remainder of the shoulder blade would be broken away except for the denser lateral border which then functioned as the stem of the pipe. Some of these objects exhibit extensive burning in the bowl area and others lack such evidence (Wintemberg 1936:84). It may be speculated that such pipes were associated with the deer hunt as only the scapula of this species was involved.

Rare clay figurines have been reported as have three dimensional human effigies moulded either inside or outside of the castellations or peaked rim elevations on pottery vessels (Benmouyal 1983; Pendergast 1968:Plate IV,5; Pendergast and Trigger 1972:



COLOUR PLATE XXIII: A MOST UNUSUAL POT FROM A MOST UNUSUAL CACHE The pottery vessel is unusual in a number of respects. First, while it is only a little more than 12 cm in height despite its size it is not a crude juvenile pot and was clearly made by an accomplished mature potter. It is also decorated with a traditional motif rather than the usual erratic designs on juvenile pots. Second, it had a small hole punched through from the inside suggesting the release of the pot's soul by breakage. It cannot be overemphasized that with native people there was not only no intellectual division between the secular and the religious but all objects, animate and inanimate, were believed to possess souls and spirit power. Normally the breakage of artifacts to release the soul occurs in association with graves and would have been intended to permit the object to accompany the soul of the deceased. Context involved burial in a small pit inside a house with the pot in question laying on its side, mouth facing east, and partially covered by a larger pot. An antler flaker protruded from the mouth of the small pot. Soil in the capping larger pot contained two bone awls, a red stone, two antler flakers (?), and a number of shell valves.(Photograph and context information courtesy of Dawn M. Wright).

Plate VIII, 1-4). Three punctates in the form of a triangle made with a hollow reed or bone, generally below the castellations of a pot, are a very common and distinctive motif on St.Lawrence Iroquois vessels and likely were intended to represent a stylized human face of some symbolic import. Consideration of pottery motifs and their possible symbolic significance, as has been applied to a segment of the Ontario Iroquois (J. Wright 1999), is yet to be done for the St.Lawrence Iroquois. Other items of probable symbolic importance are the large quartz crystals from the Roebuck site (Wintemberg 1936:16 & 73; see Hamell 1983 for symbolic importance) and the turtle effigy etched into a pebble at the Mandeville site (Chapdelaine 1989:Fig.7.22). In the Earth Diver creation myth the world was created on the back of the Turtle who in his own right was a powerful supernatural being.

Diseased human teeth recovered from pits at the McKeown site have been interpreted as indirect evidence of a fear of witchcraft (Wright and Wright 1993:6). Regarding Iroquoian views as they pertain to witchcraft see Shimony (1961:261-288). As recorded in both early documents and ethnographic studies an individual's body parts had to discarded with care lest an enemy use them to cast an evil spell on the owner. Diseased adult molars have also been reported from the McIvor site (Chapdelaine 1989:211).

Manner of treating animal remains likely indicate behaviour dictated by taboos. At the Beckstead site, for example, while 24% of the mammal bone was burned fish bone, which represented 28% of the total faunal collection, lacked such evidence (Pendergast 1984:Fig.2, 239) suggesting a taboo forbidding the burning of fish remains. This finding is in accord with a early 17th century Huron taboo prohibiting the burning of fish bones (Wright 1972). In contrast, the abundance of mammal bone exhibiting dog gnawing and/or having passed through a dog's digestive system would suggest there was no general taboo against giving dogs access to certain discarded animal bones. Taboos need not be animal species specific but, rather, premised on the method of capture of the animals. For example, large numbers of fish are captured in nets and if a fish's spirit is offended by a breach of taboo no fish might enter future nets. Similarly, Samuel de Champlain while participating in a Huron deer pound hunt where large numbers of deer had to be driven into the pound not unlike fish being captured in a net, was reprimanded by his Huron companions for cooking some meat as it could lead to the deer avoiding the pound.

The foregoing are but dim reflections of the once rich intellectual interplay between people and their environment, an interplay heightened beyond our western appreciation by the belief that all objects, animate and inanimate including artifacts, had spirits which had to be reckoned with and, in particular, placated in order to maintain a balance essential to life and well being. In a society which would have shared many religious principles with the pre-Christian Germanic, Scandinavian, and Celtic tribes of northern Europe (Davidson 1993) there would have been no separation of the religious and the secular; these constituted a single entity in the endless Circle of Life.

External relationships:

As with other Iroquoian groups the evidence of involvement with far flung trading networks so characteristic of earlier periods is limited. One is left with the impression of relatively parochial communities whose belief systems regarding the treatment of the deceased and the need for exotic grave offerings had changed dramatically with the adoption of horticulture. In place of richly provided graves, the abundant use of red ochre, and the acquiring of exotic objects from as far away as the Gulf of Mexico, the central Atlantic coast, and Lake Superior, the burial of kinsmen within or in close proximity to the village without imperishable grave offerings became the norm. This major change began to take place around the beginning of Period V and was well established by the 14th century. It is cautioned, however, that the physical evidence available to archaeology cannot address such intangibles as religious attitudes and the perception of the cosmos which would have remained as important as ever. Anthropologists have long recognized that religious values and practices represent the segment of human culture most resistant to even the most massive impact of cultural change as is still apparent today among many native people. Thus, the absence of grave offerings certainly does not reflect any lessening of concern for the deceased. For example, offerings to the deceased among the Huron and other Iroquoian people were presented to relatives of the deceased in order to "dry their tears". Indeed, it has been recorded among the same people that if the village and the cemetery caught on fire at the same time the villagers would attempt to save the cemetery first (JR XXXIX:31). It is assumed that similar attitudes existed among the St.Lawrence Iroquois.

Disputes stemming from the archaeological/linguistic evidence versus current native oral traditions regarding who occupied the St.Lawrence Valley may not be an either-or situation or, if you will, simply two opposing opinions. It is probable that some of the present day Huron at Lorette outside of Québec City include members with blood lines going back to the southern Huron tribes into which numerous St.Lawrence Iroquois women and children were adopted in the late 16th century and, thus, provide a rational basis for the perpetuation of oral traditions regarding origins in the St.Lawrence Valley (Tremblay 1999a:49). The same possibility could apply to some of the descendants of St.Lawrence Iroquois who were adopted into Onondaga, Oneida, and Mohawk communities at the same time or later as descendants adopted by the Huron prior to the destruction and absorption of the Huron by the League Iroquois in the mid 17th century. Such a probability is particularly pertinent to Iroquoian people who have an exceptionally strong concern with the accuracy of their oral traditions. Continuity is a major Iroquoian concern. The matriarchs were responsible for a store of names of the deceased which were then transferred to the living and, in this respect, maintain an unbroken lineage between the past and the present. It is, thus, not unreasonable to suggest that while a people may be destroyed as an archaeological entity their traditions as well as their genes are not destroyed but simply absorbed into the cultural fabric of their adopters. Following from the preceding assumption it is speculatively suggested that the Arendahronon, the 16th century Huron tribe occupying the northeast corner of Lake Ontario and the group most directly involved in hostilities with the St.Lawrence Iroquois and with the most abundant evidence of adoptions of the latter, when adopted by the Mohawk, took with them absorbed St.Lawrence Iroquois oral traditions including origins in the St.Lawrence Valley leading to current Mohawk claims. While there is clear evidence that the Mohawk per se developed within their traditional homeland in the Mohawk Valley this does not account for the possible persistence of oral traditions of earlier adopted people who now are Mohawk.

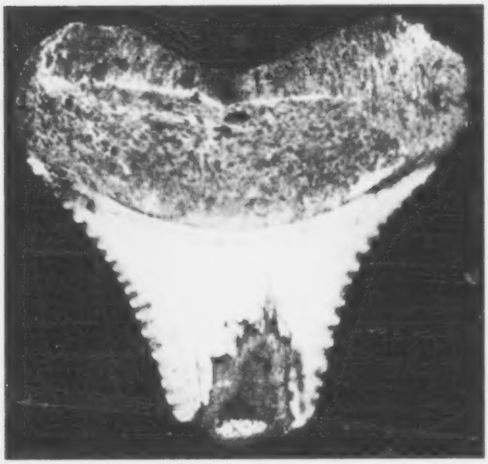
Evidence of contacts with other communities can be seen in certain exotic items and, in particular, the presence of alien pottery styles. Exotic items include rare marine shell beads from the Atlantic coast and native copper items likely originating from the Lake Superior region. Soapstone beads, common on St.Lawrence Iroquois sites, are not associated with evidence of local manufacture except on some of the New York sites (Abel and Fuerst 1999) and must have been brought in as finished objects. A source or sources somewhere in the Appalachians of New York or the New England states is a possibility. Soapstone is a talc, a hydrous silicate of alumina, magnesia and iron, and is the softest mineral on the Moh's scale of hardness. Stone pipes, particularly early in the sequence, were sometimes manufactured from soapstone or steatite as it is also known. At sites like Beckstead (Pendergast 1984), where there was considerable evidence of hostilities in the form of calcined and charred human bone (D'Andrea et al. 1984:219), there was no recognized evidence of exotic items, including pottery, which might be anticipated if prisoners were being brought to the site from some distant locale. Only a few marine shell and soapstone beads were recovered. It may be that hostilities at the time in the mid 15th century (Pendergast 1993:30) were regional and involved other St.Lawrence Iroquois unlike later St.Lawerence Iroquois sites in eastern Ontario where significant quantities of Huron style pottery reflect the presence of captive Huron women. Certainly by the early 16th century it would appear that all of the western St.Lawrence Iroquois were allied in a war with elements of the Huron. Cartier was told by the Hochelagans on Montréal Island that they were at war with the agojuda, the evil ones, who came down the Ottawa River and wore wooden slat armour (Biggar 1924:170-171). The last comment suggests that the agojuda warriors were Iroquoian rather than Algonquian. During the first half of the 16th century the upper St.Lawrence River was still occupied by the St.Lawrence Iroquois and, therefore, the River was not a likely attack route. Alien pottery present on both contemporary St.Lawrence Iroquois and southern Huron villages at the time suggest that they were combatants and therefore the Huron were likely the agojuda of the Hochelagans in 1535. Southern Huron on the northeast corner of Lake Ontario would have had ready access to the Ottawa River via the Rideau River system and thus would have been able to bypass the St.Lawrence Iroquois villagers on the St.Lawrence River.

Regrettably to date it has not been possible to effectively apply the direct historical approach to St.Lawrence Iroquois sites. The sole example of a European object found in good archaeological context on a village is the iron awl recovered from one of the defensive ditches of the McKeown site (Wright and Wright 1990). Europeans fishing in the Gulf of St.Lawrence would have been trading with local native before the voyages of Jacques Cartier. Some of the imperishable goods would almost certainly have found their way into the hinterlands via hand to hand transactions. There is no scarcity of large scale excavations and a multitude of sampling of 16th century western St.Lawrence villages in Ontario and Québec but only a single iron awl has been produced. Either the early 16th century European-St.Lawrence Iroquois trade involved mainly perishable objects like woolen goods or the European items had only a limited penetration of the interior. If such trade in the upper St.Lawrence had been significant it should be more apparent.

The presence of exotic pottery on sites is most parsimoniously interpreted as the product of captive women and on an order of scale can be truly impressive. At the mid-16th century Huron Trent site, for example, over 35% of the pottery was classified as being made in the St.Lawrence Iroquois style (Burger and Pratt 1973). Shell tempered pottery in styles typical of Maritime Algonquian culture has been reported in the Québec City area (Tremblay 1999:97), and the Lac Touladi region on the headwaters of the St.John River in Québec (Burke et Chalifoux 1998), and along the Gaspé coast (Barré 1975). Such occurrences would have been the products of both mobile groups of Micmac-Maliseet as well as possible captive women in the Québec City instance. Indeed, the occurrences of exotic pottery on sites is undoubtedly the best single indicator of relationships among various people. The fact that all seven of the Stadaconan St.Lawrence Iroquois villages were located on the north side of the St.Lawrence River indicates that hostilities existed with the Maritime Algonquians as documented by Jacques Cartier.

The relationship between the western St.Lawrence Iroquois in eastern Ontario and southern Québec and the southern tribes of the Huron along the north shore of Lake Ontario involved a conflict lasting nearly 200 years which terminated in the dispersal and absorption of remnants of the St.Lawrence Iroquois by their Huron victors around the end of the 16th century. Indeed, the Hochelagans in 1535 told Jacques Cartier that their enemies to the west wore slat armour and waged continual war against them (Trigger 1976:196-197; 1987:Plate 33). Archaeological evidence bearing on this prolonged conflict has been best summed up by James F. Pendergast (1993). Both the hostilities and the eventual dispersal-absorption is apparent from a number of lines of evidence. As a given, for example, the St.Lawrence Iroquois simply disappear from the archaeological record. In terms of the actual conflict both St.Lawrence Iroquois villages and contemporary southern Huron villages on the frontiers of a no-man's land were heavily defended. Initially, the gap between these two Iroquoian groups was less than 150 km but eventually increased to 300 km away for the villages immediately east of Toronto. The Huron tribe occupying northeastern Lake Ontario would move up the Trent River into its headwaters before joining the confederacy in Huronia. Such population shifts likely reflect defensive strategies. What initiated the hostilities is still speculative. It is speculated that with the initial alliance of the eastern tribes of the League of the Iroquois, sometime between the mid-15th and late 16th centuries (Fenton 1998:Table 1, 69), the large St.Lawrence Iroquois populations in northern New York, whose villages were only a short distance from the Onondaga and Oneida villages to the south, apparently felt compelled to put some distance between themselves and their southern neighbours who had succeeded, for the first time, in establishing an effective multi-tribal confederacy. All other Iroquoian confederacies were composed of closely related tribes who spoke mutually intelligible languages. In contrast, the Seneca and the Mohawk of the Iroquois League, for example, were the products of quite distinct cultural traditions and spoke mutually unintelligible languages. The shift of the New York St.Lawrence Iroquois populations into eastern Ontario, hypothetically responding to southern pressures from their eastern Iroquoian neighbours, would have been regarded as a hostile act by some of the Huron tribes who seasonally exploited areas around the embouchure of the St.Lawrence River less than100 km to the southwest of the villages of the newcomers. Physical evidence of conflict appears as trophy objects manufactured from human bone, such as skull rattles and cups, ulna daggers, and the like. Burnt and broken human bone found in middens, house pits, or in palisade ditches (Pendergast 1984:62) are indicative of prisoner-sacrifice and ritual cannibalism. Of the thirty-five cannibalized individuals identified from the Roebuck site nearly 90% were adult males, mainly young males (Knowles 1937), although the accurate gender assignment of these dog-gnawed remains has been recently questioned (Janet Young, Research Associate, Canadian Museum of Civilization: personal communication). Not all St.Lawrence Iroquois sites in the same area are characterized by similar degrees of evidence of possible cannibalism suggesting the existence of other cultural determinants influencing where specifically prisoner-sacrifice took place. Evidence of cannibalism, for example, was scarce at the McKeown site (Stewart 1999) but abundant at the nearby contemporary McIvor site (Chapdelaine 1989:211) and was totally absent from the Mandeville site in Québec (Chapdelaine 1989:112). Equivalent evidence of warfare in the form of prisoner sacrifice and war trophies is found on contemporary Huron villages to the west along the north shore of Lake Ontario.

Other mutually alien traits associated with the geographically displaced St.Lawrence Iroquois and Huron pottery are the distinctive St.Lawrence Iroquois discoidal pottery beads and Huron tubular bird bone beads, respectively. In addition to the distinctive female pottery and probably the pottery beads, items which can be associated with male material culture, like pottery pipes and some of the equally distinctive bone technology of the St.Lawrence Iroquois, are either absent from the Huron villages or are very rare suggesting that it was mainly the females who were being incorporated into the Huron villages and not males. An equivalent situation existed on the contemporary St.Lawrence Iroquois villages. It should be noted that the coronet style smoking pipe used to suggest



BLACK AND WHITE PLATE XLVI: AN UNUSUAL TRADE ITEM FROM THE POINTE-DU-BUISSON 4 SITE This fossil white shark tooth was one of two recovered from the pre-horticultural Period V occupation of the Pointe-du-Buisson 4 site (Clermont et Chapdelaine 1982:112). It likely came from fossil deposits in the Maritime provinces and is indicative of contact to the east as are the occasional bone harpoons found on St. Lawrence Iroquois sites like Roebuck (Wintemberg 1936:29). (Photograph and permission to reproduce same courtesy of Dr. Norman Clermont, Departement d'anthropologie, Université de Montréal).

the presence of Huron men on St.Lawrence Iroquois sites (Pendergast and Trigger 1972:135; Pendergast 1992) is stylistically different from Huron coronet pipes and probably represents a pan-Iroquoian form. The foregoing archaeological evidence accords well with the historically documented treatment of captives by Iroquoian people whereby women and children were generally adopted but old people and warriors were put to death either in the heat of battle or as captives. Around the end of the 16th century the western St.Lawrence Iroquois disappear from the archaeological record, an event which corresponded with the massive influx of St.Lawrence Iroquois pottery into the southern Huron villages. These villages then shifted northward to eventually form part of the Huron Confederacy of five tribes recorded by the French in the 17th century.

Not all archaeologists will agree with the preceding scenario. Some have suggested that the St.Lawrence Iroquois were dispersed by the League of the Iroquois with refugees being absorbed by adjacent Huron and Algonquian allies (J. B. Jamieson 1990). A number of factors have been put forth in support of such a view, such as population pressure resulting from scarce resources, climatic change, and economic developments, all leading to the hostilities that began around AD 1400. There is, in my opinion, little or no supporting evidence for the foregoing proposal and it flies in the face of significant contrary substantive evidence, such as if the main enemy of the St.Lawrence Iroquois was the League of the Iroquois then why are the most heavily defended villages facing the Huron to the west and why, if entire refugee populations are being adopted, is male material cultural so scarce compared to material culture objects that can be attributed to females. This is not to deny that an alliance of the eastern elements of what would become the

League of the Iroquois, the Onondaga, Oneida, and Mohawk, was likely the factor which led the St.Lawrence Iroquois villages in New York to shift across the St.Lawrence River into Ontario in the first place. Evidence of eastern Iroquois hostilities with the western St.Lawrence Iroquois occurs in the form of St.Lawrence Iroquois pottery and pottery beads on Mohawk as well as Onondaga and Oneida sites (Engelbrecht 1993:386; Kuhn et al.1993). The quantities of these materials on eastern Iroquois sites, like the Mohawk Garoga site, are minuscule, however, when compared to their occurrences on southern Huron sites along the north shore of Lake Ontario. It has been speculated that being the first Iroquoian people to have prolonged contact with Europeans the St.Lawrence Iroquois may have been decimated by introduced European disease contributing to their ultimate demise. I would agree with Jamieson that the middle man hypothesis to explain the demise of the St.Lawrence Iroquois is without factual foundations. This hypothesis proposes that the St.Lawrence Iroquois were destroyed by Iroquoian competitors because they blocked access to the European trade coming into the St.Lawrence.

Unlike the western St.Lawrence Iroquois sites those to the east are *all* small and unpalisaded. The eastern most hamlet which can be isolated as a single component is the Masson site upriver from Québec City. What happened down river from Québec City presents problems. Whereas the majority of Québec archaeologists regard sites east to the Saugenay River as being St.Lawrence Iroquois seasonal occupations, there are difficulties with this ethnic assignment. It is essential to raise the question of whether these sites were Iroquoian, Algonquian, or a mix of both. Years ago, Charles A. Martijn cautioned us on basing Iroquoian or Algonquian ethnicity solely on pottery styles, a warning echoed by James F. Pendergast in the same article (Martijn 1969:90-91 and 83-84). In my opinion, it is a mistake to assume, based on pottery styles alone, that "L'étendue de ce style nous permettra de définir le territoire occupé par ce groupe iroquoien" (Chapdelaine 1991:44). Others (Crépeau 1982), have recognized the problem of associating pottery styles in any one-to-one relationship with ethnicity and the necessity for sophisticated analyses to demonstrate ethnic relationships based upon technology.

Table 24, on the next page, suggests that either Iroquoian and Algonquian seasonal camps below Québec City cannot be distinguished from one another on the basis of technology or that the Saugenay River region sites are actually seasonal Algonquian sites or even accumulations of both Iroquoian and Algonquian seasonal forays. While there are difficulties in identifying ethnicity of a site simply on the basis of tools, the tool kits of the last three sites on the Table appear to be strikingly consistent with the many small sites down river in the Cap Tourmente area (Chapdelaine 1993a). One could argue that during their warm weather seasonal sea mammal hunting and fishing expeditions into the Gulf of St.Lawrence the St.Lawrence Iroquois adopted an essentially

Algonquian tool kit. Certainly the toggling antler harpoons and foreshafts from the Place-Royale site in Québec City (Chapdelaine 1993) are elements of technology that do not appear on the western St.Lawrence Iroquois sites.

	MASSON		OUELLET		ANSE À LA VACHE		POSTE DE JOLLIET	
	f	%	f	%	f	%	f	%
Rims	401	74.4	46	10.7	20	15.6	26	10.2
Pipes	33	6.1	0	0.0	0	0.0	0	0.0
Chipped stone	98	18.2	312	72.9	98	76.6	223	87.5
Ground stone	7	1.2	0	0.0	0	0.0	6	2.4
Expedient tools	0	0.0	70	16.4	10	7.8	0	0.0
TOTALS	**539**	**99.9**	**428**	**100.0**	**128**	**100.0**	**255**	**100.1**

TABLE 24: COMPARISON OF TOOL KITS FROM A ST.LAWRENCE IROQUOIS HAMLET (MASSON), TWO SEASONAL CAMPS IN THE SAUGENAY REGION (OUELLET AND ANSE À LA VACHE), AND A MONTAGNAIS ALGONQUIAN SEASONAL CAMP (POSTE DE JOLLIET) The Masson hamlet would be acceptable to researchers as an eastern St.Lawrence Iroquois site. Both the Ouellet and the Anse à la Vache sites are seasonal camps in the Saugenay River region and the Poste de Jolliet is a stratified Montagnais site near Mingan on the north shore of the Gulf of St.Lawrence. Different reporting methods called for a simplistic comparison of the respective tool kits. Chipped stone consists mainly of end scrapers, other scraper varieties, arrowheads, pièces esquillés or wedges, and a few drills. Expedient tools are anvils, metates, and grinding tools. Even given the general nature of the comparison it is apparent that the bona fide St.Lawrence Iroquois hamlet of Masson differs strikingly from its purported seasonal products, the Ouellet and Anse à la Vache sites. Indeed, the aforementioned sites compare far more closely with a stratified Montagnais site whose ethnicity was determined by the direct historic approach. Coefficients of similarity of the Poste de Jolliet site with the Ouellet and Anse à la Vache sites were 166.1 and 173.5, respectively, but equivalent figures when compared to the Masson site were 59.1 and 67.7, respectively. The highest coefficient was between the Ouellet and the Anse à la Vache sites at 182.8.

Pottery styles have been heavily relied upon to distinguish between Iroquoian and Algonquian sites in the Gulf of St.Lawrence (Plourde 1993) even though it has been demonstrated that Algonquian-speaking people in the area shared the same Iroquoian or proto-Iroquoian style pottery (Lévesque 1971). Both the St.Lawrence Iroquois and elements of the Montagnais Algonquians participated in the same Owasco-Oak Hill related pottery traditions as the eastern Iroquois (Onondaga-Onieda-Mohawk). As such, pottery cannot be used as an ethnic marker in isolation from other lines of evidence. Sharing of the same pottery tradition by Iroquoian people and their Algonquian-speaking neighbours was more the rule than the exception as has been noted in a number of instances in addition to the St.Lawrence Valley (Ritchie 1949a; Wright 1979:86). Under the circumstances it would be prudent when attempting an ethnic identification to rely upon a composite of cultural systems and other aspects of technology, such as the chipped stone tool industry. At the Place-Royale site in Québec City, for example, where St.Lawrence Iroquois pottery has been identified, the small, side-notched and triangular arrowheads are described as, "Ces pointes sont caractéresées par un travail qui semble expéditif et négligé" (Clermont et al. 1992:46). Such a description fits the minimal retouch characteristic of Algonquian arrowheads but not Iroquoian arrowheads. This could mean, of course, that the easternmost St.Lawrence Iroquois adopted an Algonquian chipped stone industry or, conversely, that both groups periodically occupied the Québec City area as has been suggested (Chapdelaine 1985:179). It is not that the difficulties of establishing ethnicity in the lower St.Lawrence River has been ignored by researchers in the area (Martijn 1969:83-84; 1990:58; Tremblay 1998:91) it is just that pottery styles appear to have been too heavily relied upon. Although a laudable research method, neutron activation analyses of clays used in pot manufacture has not been able to aid in any resolution bearing on inferences regarding ethnicity. Clay deposit and pottery vessel neutron activation comparative analyses in the Chicoutimi and Québec City region indicate that the vessels were of local manufacture, thereby eliminating the possibility of transportation of vessels through exchange and trade from upriver (Crépeau et Kennedy 1990:73).

The small sealing sites around the mouth of the Saugenay River have been regarded as the product of seasonal forays by Iroquoian peoples from the Québec City region over a five century period prior to European contact (Plourde 1999). Plourde further suggests that the sites were not Algonquian as Algonquians in the area would have been further inland hunting moose and caribou. His criterion for Iroquoian authorship of sites include deposits of some of the garbage away from the hearths, a marine mammal hunting focus, little evidence of the use of quartzite from the Canadian Shield but, rather, more Appalachian stone materials, the high frequency of ground stone tools, and the pottery styles. Everyone of these criteria can be countered or turned around and used in favour of an Algonquian authorship or, possibly a combined Algonquian-Iroquoian melange. Other lines of evidence will have to be relied upon to help resolve this matter of ethnicity in the Gulf of St.Lawrence. For example, at the Anse à la Vache site on Île Verte harp seal (*Phoca groenlandica*) was the major prey suggesting a hunt prior to May (Rioux et Tremblay 1997-98:197) which is at odds with the inferred summer seasonal movement of the St.Lawrence Iroquois into the Gulf from the Québec City region. Indeed, regarding

Île Verte "...the strategic location of this region at the crossroads of several major fluvial routes (Saint Lawrence, Saguenay, and Saint John rivers) holds many implications for intertribal relations, aboriginal trade networks, and European contact situations" (Martijn 1990:56). Further east at Red Bay in Labrador a stylistically St.Lawrence Iroquois pottery rim was sloppily moulded and poorly fired, all typical manufacturing characteristics of Algonquian pottery (Wright 1981:55). Neutron activation analysis of the rim did not match with pottery from the Québec City region and, therefore, an Algonquian authorship is most probable (Martijn 1990:57). An AD1539 report that natives in the Blanc Sablon area of the Strait of Belle Isle understood "...any language, French, English, and Gascon" (Biggar 1930:453-454) likely refers to the Montagnais and not the St.Lawrence Iroquois (Martijn 1990:footnote 24).

It is essential to appreciate the ease and rapidity of movement which was possible along the St.Lawrence River and its connecting tributaries and the extent of geography involved. This natural highway system created exceptional opportunities for cultural contacts, such as evidenced by a Seneca-Cayuga style rim sherd from the Place-Royale site (Clermont et al. 1992:Planche 40; see MacNeish 1952:50-51) or the Huron and St.Lawrence Iroquois style pottery from the Algonquian Metabetchouan site on Lac Saint-Jean (Simard 1970). With Algonquian people participating in various Iroquoian pottery traditions a widespread distribution of such pottery, particularly in or near to traditional Algonquian territories, is only to be expected. St.Lawrence Iroquois style pottery occurs in northern New England on sites in Vermont and Maine (Petersen 1990:35). It is also found in the Témiscouta area on the headwaters of the Saint John River in Québec, an area dominated by Maritime Algonquian culture (Chalifoux et al. 1998), and as far east as the Connecticut River (Chapdelaine et al. 1995a). The question must be asked 'are these scattered bits of evidence indicators of Iroquoians, captives or otherwise, or are they the products of Montagnais, Western Abenakis, and other Algonquian-speaking people sharing a similar pottery tradition'? It has been suggested that after the dispersal of the St.Lawrence Iroquois a number of the refugees fled to the Abenakis, particularly along the Kennebec River of Maine (Tremblay 1996:85). Given the existence of the Kennebec River and Chaudiére River water route, however, such occasional vessels may simply be Algonquian versions of St.Lawrence Iroquois pottery and have nothing to do with refugees per se. Similar sherds have also been found on the headwaters of the Penobscot River (Ibid:Fig.1).

Bizarre finds relevant to ethnicity are considered in this section although they could just as well have been considered in the section on **Cosmology**. In western Vermont three intact vessels stylistically indistinguishable from St.Lawrence Iroquois pots were discovered in the 19th century; two in a rockshelter(s?) and another apparently in a pit but not associated with a site (Petersen and Toney 2000). While possibly votive offerings or unrecovered caches their occurrence in western Vermont raises the question of whether they were made by Western Abenaki or St.Lawrence Iroquois potters. St.Lawrence Iroquois pottery does occur on campsites at the northern end of Lake Champlain (Blais 1993) but it is still a valid question whether such sites are indicative of seasonal forays of St.Lawrence Iroquois into the area from the north via the Richelieu River or Western Abenaki people who were participating in the same pottery tradition. A somewhat similar situation has been recorded from western Québec near the town of Luskville upriver from Ottawa on the Ottawa River. At the turn of the century two intact, typical St.Lawrence Iroquois pottery vessels were stated to have eroded out of the bank of a creek (Sowter 1909:72). A third intact vessel of typical St.Lawrence Iroquois form has been reported from the same lot and range as well as a St.Lawrence Iroquois rim sherd and a probably associated pottery pipe bowl (Pilon et Marois 2001:Fig.7). W. J. Wintemberg visited the site in question and recorded that the pottery vessels had been placed in a crevice in a large natural rock deposit (Dr. Jean-Luc Pilon, Archaeological Survey of Canada, Canadian Museum of Civilization: personal communication). The protected location described by Wintemberg accords more reasonably with the intact nature of the vessels than the location provided to T.W.E. Sowter. All three vessels are in the collections of the Canadian Museum of Civilization. While the aforementioned complete vessels may have represented votive offerings of supplicants seeking spiritual assistance or were an unrecovered cache, the rim sherd and the pipe fragments could indicate the presence of a campsite. As the site in question is not only in the heart of Algonkin territory but also in an area where virtually no evidence of St.Lawrence Iroquois pottery has ever been encountered by archaeologists (Pendergast 1999) it raises two questions. If the existence of a campsite can be demonstrated it could pertain to St.Lawrence Iroquois refugees at the time of the dispersal of the western St.Lawrence Iroquois villages at the end of the 16th century. If this should not be borne out then how have classic St.Lawrence Iroquois pottery vessels ended up as intact specimens under unusual circumstances in alien territory and a region where contemporary Ontario Iroquois pottery styles made by Algonkin potters dominated? In both the Vermont and the Québec instances the pots involved do not appear to be Algonquian copies. Certainly pottery vessels can be traded or carried into alien territory by captive women or refugees but to only occur intact in caches is a most peculiar situation.

Just as the situation of ethnic identification below Québec City has involved considerable debate it is beginning to appear that a somewhat different problem involving ethnic identification may exist near the embouchure of the St.Lawrence River from Lake Ontario. A number of geographically discrete clusters of St.Lawrence Iroquois villages in northern New York have been identified (Engelbrecht et al. 1990) and have recently been increased to a total of five designated Ellisburg, Dry Hill, Rutland Hollow, Black Lake, and Clayton (Abel n.d.). It is the Clayton cluster closest to the embouchure of the

St.Lawrence River which raises questions. This cluster is composed of the St.Lawrence, Matteson, Swarthout, Mud Creek, Depauville, Chaumont, and Point Salubrious sites and is believed to date between AD 1450 and 1525. It is the St.Lawrence site which, in particular, raises problems. It appears to be closely related to nearby contemporary Huron villages in Ontario which are correspondingly characterized by high frequencies of St.Lawrence Iroquois pottery (Pendergast 1963; 1964a; 1972). Most of the other sites in the Clayton cluster also have unusually high frequencies of Huron pottery and pipe styles and a relative scarcity of distinctive St.Lawrence Iroquois pottery motifs. There are a number of aspects to this unusual circumstance. First, the pottery from the12th century occupation of the Pillar Point site at the eastern end of Lake Ontario (personal examination) is a mix, as well as a blending, of Owasco and early Ontario Iroquois styles suggesting that this area was one involving intensive early cultural contact situations between contemporaneous New York and Ontario cultural developments. Second, the Brophy Point site on Wolfe Island at the embouchure of the St.Lawrence River from Lake Ontario, only 15 km from the aforementioned St.Lawrence Iroquois site (Pendergast n.d.), is dominated by Ontario Iroquois pottery spanning the period from the10th century to early 16th century. There is an apparent absence of St.Lawrence Iroquois pottery from this site despite the proximity to the Clayton Cluster (personal examination of the Brophy Point collections in the Archaeological Survey of Canada, Canadian Museum of Civilization). Timothy Abel believes the Clayton Cluster represents a series of movements by a single community. He further recognizes the relationship with contemporary Ontario villages and suggests that there was a cultural convergence between the two populations around AD 1550 as the result of a political alliance. There was undoubtedly a close relationship between the Ontario and New York communities (Pendergast 1985) but what it means is another question. For example, St.Lawrence Iroquois pottery on nearby Huron villages is 10% at Payne and 14% a Waupoos. In contrast, Huron pottery on Clayton Cluster villages is 29% at St.Lawrence, 32% at Swarthout, and 18% at Chaumont (Pendergast 1964a:Table 1; 1985:Table 1). It should be noted that the St.Lawrence and Swarthout sites are 4 km apart and that the latter site would likely date around AD 1400 and the former to the mid-16th century. Similarly, the Ontario site sequence in Prince Edward County spans the period between AD 1400 and 1550. If a merger did take place between the Ontario and New York communities it would appear, on the grounds of the pottery and pipes, that in some instances Huron communities had joined the St.Lawrence Iroquois villages rather than visa versa. One problem with Abel's proposition is that he appears to have the Ontario-St.Lawrence Iroquois chronologies essentially reversed by placing faith in the radiocarbon dates from the Steward site fishing camp in Ontario (Jamieson 1990). This is a questionable degree of faith in radiocarbon dates given both the small samples and the partially arbitrary and mixed so-called components being dated (Wright 1990:500). The foregoing suggests that archaeologists would be advised where possible to focus on the relationships between neighbouring communities regardless of cultural labels.

Human biology:

Discontinuous morphological cranial traits are the products of complex genetic processes and indicate that the St.Lawrence Iroquois, as represented at the Roebuck site, shared the same early ancestry as groups like the Huron (Molto 1983:256-257). The closest comparison was between the Roebuck site population and the early Ontario Iroquois Pickering complex burials at the Serpent Mounds site on Rice Lake, Ontario. It is significant that this Period IV Point Peninsula complex burial mound site was also regarded as a sacred place by 12th and 13th century Pickering people but is not a surprising phenomena given the technological continuities between the Point Peninsula complex of Period IV and the subsequent Pickering complex of Period V. As the Point Peninsula complex of Late Great Lakes-St.Lawrence culture (Wright 1999) was wide spread throughout the Lake Ontario and upper St.Lawrence region it is possible that a shared gene pool contributed to both the descendant St.Lawrence Iroquois and Huron populations as well as other eastern Iroquoian populations.

Pathological conditions recorded for the St.Lawrence Iroquois were those shared with other Iroquoian people; namely tuberculosis, syphilis, periostosis, osteoarthritis, osteophytosis, trauma like broken bones, and dental difficulties, particularly cavities (Larocque 1980). Among the skeletal sample from the Dawson site in Montréal before death tooth loss and considerable dental attrition were common (Pendergast and Trigger 1973:318-319), conditions also frequent at the Mandeville site (Chapdelaine 1989:113-114).

The largest sample of St.Lawrence Iroquois skeletal material to be studied to date is from the Roebuck site (Knowles 1937). A recent re-examination of these materials prior to their reburial under an agreement between the Mohawk at Akwesasne and the Canadian Museum of Civilization has determined that 47 adults, 7 juveniles, 16 children, 11 infants, 1 perinatal, and 5 foetuses were involved. Curiously, of the adults only four were male and three of these exhibited severe pathological lesions. This adult gender imbalance at the Roebuck site did not characterize the skeletal samples from either the Dawson or the Mandeville sites. In terms of pathology at the Roebuck site one child exhibited evidence of severe tuberculosis and an adult male had suffered from cancer. A intriguing trait identified for the first time was ubiquitous bilateral femoral torsion among the women, a condition which has been related to left or right handedness (Janet Young, Research Associate, Archaeological Survey of Canada, Canadian Museum of Civilization: personal communication). It may be speculated that whether a woman was right or left handed could determine which side of her body she would favour carrying loads, such as a child. Such a factor, particularly during a young woman's growth period, perhaps was responsible for the bilateral femoral torsion noted by Janet Young during her analysis.

Inferences on society:

Factors believed to be involved in the transformation of hunters and gatherers into horticulturists will be considered in detail in the following Chapter 33. Suffice to say that while this major change in subsistence, which impacted so dramatically upon settlement patterns and other aspects of culture, appears to have been exceptionally rapid from an archaeological perspective there was undoubtedly a long history of experimentation with various cultigens and the *required concomitant social changes* before the Three Sisters, corn, beans, and squash, actually formed the economic base of the societies involved. The sparse evidence of Period IV cultigens was considered in an earlier chapter on Late Great Lakes-St.Lawrence culture (Wright 1999:639-641). It is apparent that the St.Lawrence Iroquois were late in the process of becoming horticulturists with the first substantial evidence not appearing until early in the 14th century in contrast to 9th century evidence for Ontario Iroquois fully horticultural sites with incipient corn horticulture appearing as early as the 6th century. This appearance of being late comers in the area of horticulture may be a false geographically based assumption. If the origin hypothesis favoured here that the St.Lawrence Iroquois were a relatively recent offshoot of the same development which gave rise to the eastern Iroquois then their distant Owasco-Oak Hill ancestors in what is now central New York State would have been practising horticulture by the 12th century, if not earlier, and the St.Lawrence Iroquois pioneers would have brought horticultural practices with them. While no Iroquoian groups abandoned their hunting and fishing traditions the eastern St.Lawrence Iroquois appear to have maintained the earlier economic pattern to a greater extent than any other Iroquoian group in eastern North America. Certainly their settlement along a major river rich in fish resources would have favoured the maintenance of fishing. That said, fishing appears to have been of great importance to all Iroquoian populations. This is not particularly surprising as fishing in many respects resembles horticulture in that fish concentrations are seasonally predictable and the harvest, like cultigens, is generally massive and can be readily preserved and stored. The St.Lawrence River is particularly rich in fish resources providing access to both freshwater and saltwater species. Particularly important for winter storage were the fatty fish like eel (catadromous - a fresh water to salt water life cycle), catfish (fresh water), and mackerel (salt water).

To judge from 16th century European documentation the St.Lawrence Iroquois were composed of a number of tribes. Indeed, there was possibly an unfriendly relationship between the upriver Hochelagans and the down river Stadaconans although this could have been an impression created by Cartier's ignorance of the language and local etiquette like asking permission and providing gifts before proceeding upriver. Caution must be exercised regarding the statement that the Stadacononan chief, Donnacona, was ruler of Canada as this country designation applied only to a limited section of the lower

St.Lawrence River. Donnacona more likely was the senior chief of a tribe or a confederacy of tribes. The western St.Lawrence Iroquois also probably constituted a number of independent tribes albeit organized into confederacies. Such confederacies would have been both mutual non-aggression pacts and military alliances when action was in the self interest of all parties involved. In this respect, the number of geographically clustered villages in both northern New York and eastern Ontario likely represented distinct tribes. If the St.Lawrence Iroquois who occupied Ontario consisted of all of the New York village clusters then it would appear the five tribes were involved. It has been recently discovered that at least one of these tribes moved into adjacent Québec (Clermont and Gagné: n.d.).

An impressive aspect of the western St.Lawrence Iroquois was the organizational skill and supportive community authority which permitted the successful mass migration out of what is now New York State across the St.Lawrence River into eastern Ontario. While there is no evidence of a prior indigenous Iroquoian occupation in the area between Lake St.Francis and Lake Ontario this does not mean that other peoples did not have prior rights to hunting, fishing, and other resources in the lands settled by the newcomers. Whether some form of negotiation took place before the migration of thousands of farming people into eastern Ontario or if it was simply an unannounced intrusion will never be known although the fact that hostilities appear to have intensified with the southern Huron tribes to the west would suggest that the immigrants were not welcomed. The archaeological evidence indicates that the migration was on a massive scale with the northern New York homeland being abandoned (Abel and Fuerst 1999) and eastern Ontario suddenly heavily populated by horticultural communities. Migrations are common to Iroquoian societies but not on the scale of the foregoing. The southern Huron tribes along the north shore of Lake Ontario shifted northward into Huronia proper in the late 16th century to join the northern Huron tribes but this was an orderly succession of relatively short village shifts. While the distance between the St.Lawrence Iroquois Black Lake cluster in New York is less than 30 km south of the Prescott cluster in Ontario it is apparent that all five clusters of New York villages must have been involved in the migration or migrations which, for the furthermost, involved distances of more than 140 km for the Ellisburg cluster on the southwestern most edge of the New York St.Lawrence Iroquois village concentrations (Abel.n.d: Fig.3). This is more than the 110 km distance between the mid-14th century Ontario Iroquois Nodwell site on the Lake Huron coast from sister villages in Simcoe County to the east (Wright 1974) although if the Nodwell occupants had come from another village cluster to the south the distance travelled by the St.Lawrence Iroquois Ellisburg cluster would have been equivalent.

In the broader scheme of things other Iroquoian tribal movements are pertinent. The westernmost Neutral tribes shifted eastward to Neutralia but, again, through a series of short village movements although in the extreme western portion of Southern Ontario the eastward shift appears to have involved a greater distance likely related to the conflict of the northern Neutral tribes with the Fire Nations of the Lake St.Clair region. Both the Erie and the Susquehannock also undertook major population shifts without apparent evidence of intermediary sites. All of these population movements took place during the late 15th to the early17th centuries. The only Iroquoian people in eastern North America not involved in significant population shifts were the League Iroquois, the Seneca, Cayuga, Onondaga, Oneida, and Mohawk. Except for the Neutral all of the other Iroquoian tribal movements, including that of the St.Lawrence Iroquois, were away from the traditional homelands of the League of the Iroquois. One could suggest that the Susquehannock move to Chesapeake Bay was to monopolize the 16th century European trade but, like a similar argument to explain the destruction of the St.Lawrence Iroquois, lacks substantive evidence. In most instances it appears that the other Iroquoian confederacies wanted to put some space between themselves and the League of the Iroquois. Documentary and ethnological estimates of when the League of the Iroquois first began to be formed closely match the dated aforementioned archaeological population shifts of their neighbours (Fenton 1998:Table 1).

Regardless of the underlying political causes for such population movements it is apparent that the organizational skills and social structure required to clear and plant distant new fields, accommodate the territorial claims of neighbouring people including coping with hostile responses, and to direct the considerable labour force required to erect new villages in lands beyond commuting range from the original home villages were clearly within the capabilities of the New York St.Lawrence Iroquois communities. It is estimated, for example, that the Roebuck site alone would have accommodated 2,000 people. If the 1.2 hectare Beckstead site, the only other known mid 15th century village in Ontario, had a population of 500 people then there were approximately 2,500 people who suddenly moved across the St.Lawrence River. These two sites are approximately 30 km apart suggesting two things. The villages were not anticipating any massive hostile threat or one would anticipate they would have been in closer proximity to one another. Their isolation also suggests that the two villages represented elements of different tribes. Regardless of the coordination or lack of it between these two early villages, simply planning for the storage of sufficient food to support such large populations until new crops were available constitutes a formidable organizational task requiring not only leadership but the whole-hearted cooperation of the community. Such major village movements, with their cooperative labour and planning, is the best archaeological reflection of the deeply held values of Iroquoian societies involving individual and community reciprocity and responsibility.

An important food resource supporting the movement of a large body of people into a new territory would have been the rich fish stocks of the St.Lawrence River.

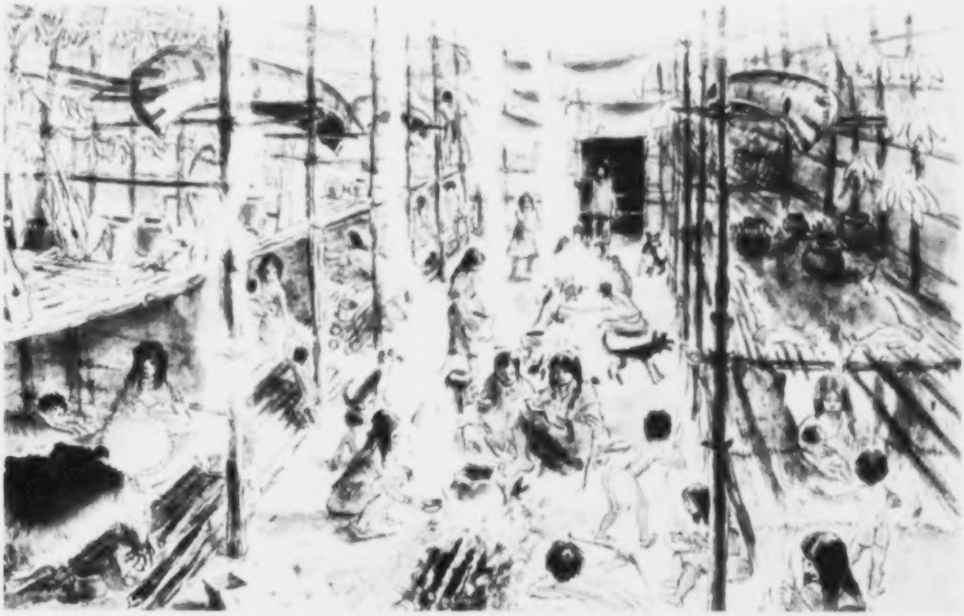
Fishing stations, such as the Steward site, would not only have provided an abundance of fresh meat but also important winter storage foods like smoked eel and dried mussels. The suggestion that such fisheries were *owned* by kin-based family interests (Junker-Andersen 1988:115-116) is most unlikely. It is more in keeping with Iroquoian cultural practices for all of the village lineages to participate in the fishery and to share in the products. Also if fishery sites were owned by lineages then one would anticipate a long string of such camps along the St.Lawrence River and there is no archaeological evidence of such. Like the growing of crops, except tobacco, the fisheries along the St.Lawrence River were likely under the cooperative control of work parties composed of women who would have had their children in tow along with the elderly segments of the community. While the women would be filleting, air drying, and smoking fish during the warmer weather, particularly during the spring and the fall, many of the men would have been widely dispersed on enterprises ranging from trading to warfare.

Limitations in the evidence:

In addition to all of the limitations inherent to archaeological interpretations there are three outstanding weaknesses in the evidence pertaining to the St.Lawrence Iroquois. These are as follows: the still limited detailed archaeological information from the major heartland of St.Lawrence Iroquois horticultural village development in northern New York State; the current paucity of large, year-round occupied horticultural villages in Québec; and the demonstration of the ethnic affiliation of camp sites producing St.Lawrence Iroquois-like pottery around the core distribution of St.Lawrence Iroquois culture, including the seasonal sites down river from the Québec City region and the northern end of Lake Champlain.

The paucity of archaeological information from northern New York State when compared to neighbouring Ontario is beginning to be rectified with a renewed interest in the region by New York archaeologists (Abel and Fuerst 1999). Many of the factors confounding an understanding of St.Lawrence Iroquois cultural development are dependant upon substantive data from this area where the majority of St.Lawrence Iroquois horticultural villages are known to have existed. Did St.Lawrence Iroquois culture move into this area from the south out of a Owasco to Oak Hill cultural base and then spread into the St.Lawrence River and did it, in the process, meld with indigenous people already in the area? Were the interplay of diffusion, migration, and amalgamation geographical two pronged events involving both the upper St.Lawrence River and the Richelieu River? None of these questions can be fully addressed given the present data lacunae in New York. Regarding the apparent cultural hiatus in northern New York between AD 1200 and 1400 (Abel and Fuerst 1999) the most parsimonious origin hypothesis is that the St.Lawrence Iroquois shared in the same cultural development which led to the Onondaga, Oneida, and Mohawk and only shifted into adjacent northern New York and Québec sometime between the mid 14th to early 16th centuries with the earliest migration possibly following the Richelieu River - Lake Champlain route.

The scarcity of large horticultural villages in Québec presents a serious problem bearing on St.Lawrence Iroquois origins and movements. It is possible that the 400 years of European occupation of the St.Lawrence River has destroyed key village sites situated near the River, such as Hochelaga and the Dawson site on the Island of Montréal, but such a probability cannot totally account for the current paucity of large, year-round occupied horticulture villages. As it stands, the known horticultural villages are widely dispersed and isolated communities stretching from Montréal to the Québec City region. Such a settlement pattern of isolated, single villages most definitely deviates from the normal Iroquoian pattern of situating a number of villages within mutual defensive range of one another. On the other hand, it does accord well with Jacques Cartier's location of the seven villages along the north shore of the St.Lawrence River in the early 16th century. If the time depth represented by these isolated villages was limited then it would perhaps be more understandable but, in fact, they extend from the 14th century Lanoraie site, to the late 15th century Masson site and early 16th century sites like Hochelaga and Dawson. The scarcity of sites is certainly not due to a lack of searching on the part of Québec archaeologists. It is perhaps significant, however, that the Masson



COLOUR PLATE XXIV: INTERIOR OF AN IROQUOIAN LONGHOUSE This rendering of the appearance of the interior of a longhouse, based upon archaeological evidence and early European observations, would apply to all such Iroquoian structures and not just those of the St.Lawrence Iroquois. The earliest archaeological evidence of a St.Lawrence Iroquois longhouse is from the Lanoraie site down river from Montréal (Clermont et al. 1983). These multi-family dwellings, occupied by women belonging to the same lineage, were bilaterally symmetrical with sleeping and family private quarters on either site of a communal central corridor where the cooking and heating hearths served a number of families. Houses were as tall as they were wide, generally 6 m among the St.Lawrence Iroquois. Some Iroquoian longhouses exceeded 90 m in length although such structures have not been recorded from St.Lawrence Iroquois sites where houses are generally around 30 m in length. As there would have been two families occupying living quarters on either side of the dwelling and sharing a single corridor hearth simply by counting the hearth floors permits archaeologists to estimate how many families occupied a dwelling. (Reproduced from Keenlyside 1984).

site, situated in a heavily farmed area, was only discovered during salvage archaeological survey and not through archaeologists being informed of the site's existence by the local landowners or interested amateurs. If such sites are not judged to be of importance by the current local population then they are unlikely to be brought to the attention of archaeologists.

The problem of the ethnicity of St.Lawrence Iroquois campsites found down river from Québec City, at the northern end of Lake Champlain, and pottery recoveries from the northern New England states has already been addressed. It has been demonstrated by archaeology that surrounding Algonquian-speaking people shared similar stylistic pottery traditions with their Iroquoian-speaking neighbours. Mobility of Algonquian hunters and fishermen would have assured a wide distribution of such pottery. Elements of a pottery tradition which eventually led to the Huron-Tionnontaté of the contact period, for example, have also appeared on Algonquian sites as far west as Lake Nipigon in Northern Ontario. Similar pottery, along with St.Lawrence Iroquois pottery, has been recovered from the Metabechouan site on Lac St.Jean (Simard 1970) and other sites. Under the circumstances, one must ask the question: why should the participation of Algonquians in Huron pottery styles not also apply to the St.Lawrence Iroquois pottery? Thus, are the occasional St.Lawrence Iroquois-like pot sherds from northern New England, including northern Lake Champlain (Pendergast 1990a; Petersen 1990), representative of a St.Lawrence Iroquois presence or simply of Abenaki women participating in a shared pottery stylistic tradition? The same question can be asked regarding St.Lawrence Iroquois or Montagnais authorship of pottery in the Gulf of St.Lawrence. A classical example of the error which arises from using pottery as a simple ethnic identifier can be seen in a map showing the distribution of Iroquoian sites well into the interior of Québec on lands documented to be Algonquian territory in the Canadian Shield (Barré et Girouard 1978:47).

Finally, there is an issue that, while not a limitation in the archaeological evidence per se, relates to the refusal by many scholars in other disciplines to make use of the findings of archaeology. This applies, in particular, to historians who limit their research to early documents and who continue to perpetuate errors in the written records long revealed to be wrong by archaeological research (Pendergast 1998). This is a widespread problem which extends well beyond archaeological concerns and has been summed up as follows:

> "History, especially in the English and German languages, was infected by an incredibly impoverished empiricism, in which novel fact-finding and minute attachment to detail replaced the concern of earlier historians to fit their researches into broader interpretations. Naturally these historians wrote largely for one another rather than a wider public who preferred to digest the old-style history or updated popular versions of it. Such historians were rightly accused by their critics of neglecting to think about the purposes of historical inquiry; being slaves to (usually state) archival material: overly focussed on narrow "high politics" or "history from above"; and arrogantly ignorant of other social science disciplines such as anthropology, demography, economics, political science and sociology" (McLeish 1995:352).

Among the purposes in writing these volumes is to attempt to demonstrate the mutual benefits to be accrued by melding the documentary history with the archaeological history. The former simply cannot be understood properly divorced from the latter and visa versa. Another purpose is to emphasize the importance of looking at all facets of culture permitted by archaeological evidence as a constellation of patterns and phenomena which collectively provide a more complete picture of past human behaviour. Narrow specialization has its place as an analytical tool which contributes to the broader picture but, in and of itself, is insufficient. Finally, it would perhaps be a constructive exercise to apply a form of quasi-entropy to archaeological data. Entropy attempts to measure disorder and randomness in physical systems based on the probability of occurrences such as the degree of entropy in crystals (low) and gases (high). If nothing else, any effort to appreciate the degree of randomness and chaos inherent in archaeological data and to make accommodations accordingly would instil a greater appreciation of the holistic and interrelated nature of the multiple facets of data and hopefully some degree of humility in archaeologists. Such a critical inclusive approach will require a broad background in anthropology, particularly ethnography and material culture, and less theoretical navel gazing isolated from the data upon which it should depend. A broadened appreciation of the potential contributions of other disciplines to archaeological issues will also be required. While biology and the earth sciences come readily to mind, in truth, there is not a discipline in the so-called sciences or humanities which does not have a potential contribution to make to a greater understanding of the lives and circumstances of past people.

CHAPTER 33

ONTARIO IROQUOIS CULTURE

Précis:

The Ontario Iroquois represents a cultural continuum encompassing all but the first few centuries of Period V (AD 500-European Contact) from whence it evolved out of hunting and gathering populations who progressively adopted a horticultural economy based upon corn, beans, squash, sunflower, and tobacco. During the early17th century French contact period Ontario Iroquois culture was identified with several confederacies of tribes called collectively the Huron, the closely related Tionnontaté, the Neutral in the Niagara Peninsula, and the closely related Erie tribe or confederacy west of the Niagara River and along the southeastern shore of Lake Erie. In addition, a small independent tribe related to the Neutral, the Wenro, fled western New York in the 17th century to join the Huron Confederacy in Ontario in order to escape the threat of Seneca attack. Only the Erie and the Wenro, all related to the Neutral, resided in western New York State. The remainder were centred throughout most of Southern Ontario. A number of archaeological syntheses of the Ontario Iroquois exist (Ellis and Ferris 1990; Finlayson 1998; Wright 1966) as well as the topical syntheses of Iroquoian culture in the Handbook of the North American Indians (Trigger 1978) and other publications (Foster et al. 1984). Detailed written records left by the Recollet and Jesuit missionaries and French explorers over approximately a half century, particularly with reference to the Huron (Biggar 1922-36; Thwaites 1976; Wrong 1939), have been subjected to insightful scrutiny (Heidenreich 1971; Tooker 1991; Trigger 1976). There are also graphical renderings, supported by brief texts, available in the Historical Atlas of Canada (Heidenreich 1987: Plate 32; Wright 1987: Plate 12). Brave readers who wish to delve into the plethora of pottery vessel types, pottery attribute studies, and the numerous debates regarding a wide range of archaeological minutae, are referred to the two most current archaeological syntheses and their bibliographies; one an over-all synthesis (Ellis and Ferris 1990) and the other an in-depth regional synthesis in the Niagara Escarpment area involving seventy six sites and a time span of more than 600 years (Finlayson 1998). The central focus of this Chapter will be upon the adoption of a horticulture economy and the resultant social and political consequences. Some readers may interpret the preceding decision to curtail description of archaeological minutae as a cop-out and they would be correct. While archaeological detail is the interpretive base underlying the truly intimidating mass of information available on the Ontario Iroquois it is often of a boring nature.

Early ethnologists, like Lewis Henry Morgan (1851) and Horatio Hale (1883), who studied the tribes of the Six Nations of the Iroquois, the Seneca, Cayuga, Onondaga, Oneida, Mohawk and, joining the League of the Iroquois early in the 18th century, the Tuscarora, in addition to numerous more recent ethnological and documentary syntheses (Fenton 1998), have all provided valuable insights into Iroquoian culture which can be, with a high degree of confidence, extrapolated to neighbouring Iroquoian people such as the Huron. In the early 17th century the territories of the League of the Iroquois were surrounded on all sides, except for the Algonquian-speaking Mahican to the east, by neighbouring Iroquoian groups; the Huron and Tionnontaté or Petun, as well as the 16th century St.Lawrence Iroquois to the north, the Neutral and the related Wenro to the west, the Erie to the southwest, and the Susquehannock to the south (Trigger 1976: Map 2). Throughout this Chapter, the term Tionnontaté will be used rather than Petun for the western neighbours of the Huron. Petun is a Brazilian Indian word for "tobacco", which the French used to refer to the Tionnontaté who were also known as the Tobacco Nation. This early 17th century distribution of the Iroquoian neighbours of the League of the Iroquois was quite different during the 16th century likely due to the political manoeuvering of the competing confederacies.

As people became increasingly dependant upon the Three Sisters, corn, beans, and squash, their settlement patterns changed dramatically from that of previous generations of hunters, fishermen, and gatherers. Unlike the seasonal sites situated at favourable fishing and gathering locales horticulture demanded conditions, in part, unrelated to wild animal and plant resources. Not only was soil favourable for crops and digging stick technology of critical importance but a large segment of the population, mainly women, were required to become increasingly sedentary in order to plant, tend, and harvest the crops. Slash and burn horticulture, however, does eventually deplete the soil, particularly given a nitrogen hungry plant like corn. Other considerations, such as the exhaustion of convenient firewood supplies, forced frequent village relocations. The horticultural economy and, in particular, the massive labour required to support it required much larger aggregations of people than the earlier hunting and fishing economies. In place of strategically located seasonal, warm weather sites containing thousands of years of mixed cultural debris the transformation to horticulture resulted in villages isolated from the earlier sites of their ancestors. Archaeologists concerned with Iroquoian research are thus presented with large sites, rich in cultural debris, detailed settlement pattern evidence, and other exceptional bodies of data all set in a geographically discrete time capsule of limited duration. The magnitude of this archaeological record, however, can be intimidating. A recent twenty-five year archaeological research project in a limited area of the Niagara Escarpment of Ontario, for example, has recorded 76 sites covering a time span of AD 1000 to the early17th century (Finlayson 1998:1310). Further, Finlayson has presented compelling arguments to back his contention that this number of sites only represents a portion of the villages in the area under investigation. Thus, the early 17th century French documentation, the ethnological information provided by extant Iroquoian peoples, and the rich nature of the archaeological record have coalesced to provide scholars with the kind of anthropological data base rarely encountered anywhere else in North America.

The adoption of cultigens from the south was a gradual process but would reach a critical stage with cultural change becoming both sudden and exponential. Experimentation with plant cultivation was taking place during Period IV (1000 BC-AD 500) and likely even during Period III (4000-1000 BC), although the direct archaeological evidence of such is limited. Squash, sunflower, and some other seed bearing plants (Smith 1987) would have been the initial subjects of this experimentation. Indeed, in eastern North America squash and sunflower are consistently the earliest cultigens encountered (Smith 1998). This should come as no surprise with evidence of 10,000 year old squash being encountered in Mexico (Smith 1997) and there is now a debate whether sunflower was also domesticated in Mexico rather than eastern North America or in both areas (Smith 1998). As the primary gatherers it is reasonable to assume that women were the major participants in plant domestication. It was not until the appearance of corn (*Zea mays*) followed by beans (*Phaseolus vulgaris*), however, that a foundation was firmly established for a horticultural economic base which would revolutionize not only subsistence practices but also settlement patterns and virtually every other aspect of culture. Of the "Three Sisters", corn, beans and squash, so-called by the Iroquois because they are always found together in the fields just like sisters in the matrilineal longhouses, corn was the most important. Probable ancestral wild corn has been found in cave sites in Tehuacan in northern Mexico around 3000 BC and primitive corn has been reported from sites in both northern Mexico and the southwestern United States dating to 2500 BC (MacNeish 1967; Mangelsdorf 1974). More recent evidence, based on corn pollen, phytoliths, and starch grains, would suggest that the domestication of corn actually took place much earlier in western Mexico between 7,700 and 6,000 years ago (Piperno and Pearsall 1998) and spread from there to the north and south. The eight-row, large-ear, flint corn variety common to eastern North America, however, did not make its appearance in Ontario until around AD 500 (Crawford and Smith 1996). Currently corn producing sites along the Grand River are the earliest dated in eastern North America. Although assigning ethnicity to early archaeological sites is fraught with risks the Princess Point complex, where the first corn appears in Ontario, would develop into the Glen Meyer complex. Admittedly a controversial issue, the Glen Meyer complex has been associated in this Volume (see Chapter 34) with the Western Basin culture of Algonquian rather than Iroquoian authorship. Initially, the Glen Meyer complex was placed within the Ontario Iroquois tradition, albeit as a complex which was destroyed late in the 13th century (Wright 1966). Although corn was the most important crop it was not the earliest cultigen in the area. Squash (*Cucurbita pepo*), originally from southern Mexico or Guatemala, was widely distributed along the major tributaries of the Mississippi River by 1,000 BC (King 1985:Fig4.1). Indeed, squash has been recovered from sites dated to 500 BC in Ohio and Michigan adjacent to Ontario (for a brief summary of pre-AD 500 cultigens in Ontario see Wright 1999:639-641). While sunflower (*Helianthus annuus*) and tobacco (*Nicotiana rustica*) undoubtedly preceded the appearance of corn, beans were a late comer in Ontario, making their initial appearance around the 13th century.

Place of origin of plant cultigens has always been a subject of deep concern to archaeologists, botanists, and other disciplines as it was these plants which established the basis for complex societies in six to eight independent centres scattered around the world. Mexico has always been one of these major centres. Recent research advances in plant mitochondrial DNA holds promise of establishing the genetic relationship between domesticated plant cultigens and their wild ancestors and thereby identify specific geographic locales for plant domestication (Sanjur et al. 2002). Mitochondrial DNA genes have been put to good use in contributing to many aspects of animal studies, including the sequences of human migrations into the Western Hemisphere (Schurr et al.1990). Genes associated with mitochondrial DNA are restricted to the female contribution to the genetic make up of both plants and animals but it has only been recently that its potential to contribute to knowledge regarding plant domestication has been demonstrated. This represents a major break through in the field of plant cultigen origins, particularly given the severe limitations inherent in archaeological recoveries of plant macrofossils, such as seeds and cobs, and the ongoing debates surrounding the issue of whether pollens and phytoliths pertain to domesticated plant species or their wild ancestors.

The earliest definite horticultural village site in Ontario which can be associated with developments leading to the Huron, Tionnontaté, Neutral, and Erie, is the AD 800-900 Miller site to the east of Toronto (Kenyon 1968). Slightly more than a half hectare in extent, this palisaded village contained multifamily longhouses, generally 18 m in length, small ossuary burials, and abundant evidence of carbonised corn. The technology, while exhibiting clear connections to the preceding pre-horticultural Point Peninsula complex of Period IV, was, in all of its essentials, quantitatively and qualitatively Iroquoian. Five other small and, in part, sequential villages have been recorded in the same general area as the Miller site (Finlayson 1985:431-433; Dr. William D. Finlayson, London

Museum of Archaeology: personal communication). Such a cluster of villages in close proximity to one other is suggestive of the early existence of a tribal organization composed of autonomous communities bonded by blood and mutual cooperative pacts. In all of the foregoing respects the Miller site can be classified as being typically Iroquoian. Given the Miller site's full-blown Iroquoian character at this early date it can be anticipated that other sites, dating to around the beginning of Period V and representing the transition from hunter and gatherers into incipient horticulturists, will eventually be identified.

The advent of slash-and-burn horticulture initiated dramatic changes in settlement patterns. Although the earlier multi-component fishing camps continued to be used in order to exploit seasonal fish runs the year-round farming villages were generally situated in isolated locales where considerations such as suitable soils for crops, drainage, a reliable water source, and natural defensive advantages, were priorities. Some of these villages would eventually expand to nearly five hectares and be surrounded by multiple rows of palisades, occasionally associated with defensive ditches. In contrast to the small nuclear family dwellings of Period IV the multifamily longhouses could approach 100 m in length (Wagner et al. 1973) although lengths of 30 m were more typical. Large garbage dumps, called middens, were generally situated around the margins of the village and at the ends of groupings of longhouses. Composed of the sweepings from the longhouse floors, middens contain an abundance of ash and charcoal, fire fractured rock, pottery and pipe fragments and other tools, carbonised plant cultigens and discarded bone fragments. Although virtually all animal species were consumed deer, fish, and dog remains tend to be most abundant. French documentation reveals that dogs were eaten for a wide range of ritual purposes and their remains on sites are more appropriately regarded as evidence of ceremonial rather than purely gastronomic activities. Human burial practices also changed dramatically from the preceding small cemeteries and isolated graves to include large communal ossuary burial pits, in most instances outside of the village, as well as individual internments within the village. As with the St.Lawrence Iroquois, foetuses and very young infants were often buried within the confines of the longhouse close to a central corridor hearth. Settlement pattern evidence has been particularly useful in drawing inferences regarding the nature of society and the stage has been reached where we can begin to speak with some confidence of the archaeology of communities involving both their movements and changes through time (Finlayson 1998).

The Agricultural Revolution which led to the Ontario Iroquois and other Iroquoian and Algonquian peoples encountered by Europeans was both dramatic and, in archaeological terms, abrupt. This, in turn, suggests that archaeological methods are still poorly equipped to recognize the earlier, incremental changes which established the necessary foundations for a rapid change in food economies. Women becoming the major food producers in place of men, for example, likely bears directly on the evolution of matrilineal societies and their associated social ramifications. Archaeological evidence for the existence of moieties during Period IV in the form of contemporary dual cemeteries in close proximity to one another (Wright 1999:657-684) subsumes the early presence of clans and family lineages. Thus, while massive changes did take place in the social structure there appears to have still been continuity with earlier elements of social organization.

Regarding initial European contacts with the Ontario Iroquois suggestions of significant 16th century trade with the Huron and Neutral (Lennox and Fitzgerald 1990:Fig.13.3; Ramsden 1990:382-383) are not convincing; particularly if the flow of European trade was up the St.Lawrence River. Such evidence is essentially absent from the St.Lawrence Iroquois sites located in the region until AD 1580. Pottery seriation, referring to the organization of bodies of comparable data into a series or sequence, and carbon #14 dating are both methodological tools which are simply too blunt for fine-grained chronological purposes and yet they have been both used to support arguments of 16th European trade into the interior. This is not to imply that the odd late 16th century European item did not make its way into the interior via hand-to-hand transactions but rather that such trade was both minuscule and its archaeological impact insignificant. Trade certainly cannot be used, as it has been in the past, to propose major economic and cultural upheavals among the native populations at the time although the introduction of European diseases could have been a possible major disruptive factor. Placing some time depth on European trade stemming from the Gulf of St.Lawrence was a small fragment of a metal alloy excavated from a 11th to 12th century Ontario Iroquois village site east of Toronto (Wright 1994:49-50) but this single item hardly reflects a flourishing trade with the Norse. Similarly, the single iron nail modified into an awl from a 16th century St.Lawrence Iroquois village in Ontario (Wright and Wright 1990) is hardly indicative of significant contact with Europeans much less extensive trade. With reference to the Seneca of western New York at the end of the 16th century it has been observed that "At this time the Seneca were basically a prehistoric people standing on the threshold of European acculturation. Only a trifling amount of trade material was trickling through to them and this small amount of goods probably owed its source to the numerous fishing and exploring boats along the Atlantic seaboard" (Wray and Schoff 1953:54). It should be noted, however, that the majority of such European goods came from graves and not village middens and therefore European items may well be under represented from most sites where excavations have focussed on the middens. It was only later when such goods became common that they appear frequently in non mortuary contexts.

The Niagara Escarpment has acted as a physical boundary dividing archaeological cultural developments in Southern Ontario into eastern and western sectors from at least Archaic times on. From AD 500 to the late 13th century, the Escarpment separated the Pickering complex to the east and the Princess Point-Glen Meyer development to the west. The former is regarded as the cultural development which led to the Ontario Iroquois of the contact period while the latter, following the lead of William D. Finlayson (1998), is considered to be ethnically Algonquian and related to the Western Basin culture of the Lake St.Clair region of Ontario and adjacent Ohio and Michigan.

At the time of European contact the Huron Confederacy consisted of five tribes, the Attignawantan, Attigneenongnahac, Arendaronon, Tahontaenrat, and the Ataronchron (Heidenreich 1987: Plate 34). The Tionnontaté, immediately to the west of the Huron, consisted of two tribes referred to as Wolf and Deer, names which also likely referred to clan names along with other unrecorded clans or possibly a moiety grouping of different clans. Among the Huron, for example, Wolf, Bear, and Turtle were names which designated both clans and moieties. Where there is documented information these three clan names occurred among all of the Iroquoian peoples of eastern North America. Regarding population densities if a Huron pre-epidemic population of 30,000 is accepted and a Tionnontaté population of 12,000 then 42,000 people were involved. Such an estimate is not out of proportion with the size and density of contemporary village sites. After the devastating impact of European introduced epidemics of the 1630's, however, the combined population of these two groups of people was estimated at 12,000 (JR XIX:127), a population decrease of over 70%. Such massive loss of life was actually the norm when native people, lacking natural immunities, were exposed to European diseases (Wright 1995:21). As horrendous as such population decimation is it does not entirely reflect the social consequences. The epidemic diseases involved, such as small pox and measles, tended to kill the very young and the elderly. Thus, both the future of a community, as represented by the children, and its past traditions as represented by the elders, was decimated leaving only the strongest, the young and mature adults, to pick up the shreds of a savaged community.

Although the French documentation is equivocal with reference to the Neutral Confederacy of tribes to the south of the Huron Confederacy, these tribes at the time of European contact probably consisted of the Attiragenrega, Ahondihrouon, Antouaronon, Onguiaronon, and the Kakauagoga with the related Wenro not being part of the confederacy (White 1978:409). Others have suggested that the Confederacy was composed of as many as eight tribes (Lennox and Fitzgerald 1990:410, Fig.13.3) or possibly even nine (Noble 1978:165, footnote 5). A population estimate is difficult given the limited French contact with the Neutral but it was noted that "This nation is very populous; about forty villages or hamlets are counted therein" (JR XXI:189). A conservative estimate would approximate the population estimate for the Huron although the archaeological evidence would suggest that an even larger population was involved.

The Erie or Nation of the Cat on the southeastern shore of Lake Erie in New York were archaeologically similar to the Neutral. They probably represented a confederacy of at least two tribes with a population estimate of 7,500 (Clermont 1992:Tableau 3). The pre-epidemic population of the Neutral and Erie may be tentatively placed at 37,500. Even with the foregoing conservative population estimates the Ontario tribes and related tribes in adjacent New York could have totalled some 80,000 people. With reference to the Huron other scholars would favour lower pre-epidemic populations of between 18,000 and 22,000 people (Heidenreich 1978:369). Recent archaeological evidence, however, tends to favour the higher estimates (Finlayson 1998). For example, using only the sites referred to as Middleport (AD 1300-1400) in a recent synthesis (Dodd et al. 1990) and following a formulae based upon the estimated number of families per acre of village space (Wright 1992a:30) provided a figure of 51,150 people. The Middleport substage or horizon was ancestral to both the Huron-Tionnontaté and the Neutral-Erie. The preceding population figure can certainly be questioned on the basis that not all of these Middleport sites would have been contemporary. This limitation, however, is more than compensated for by the fact that only a undetermined percentage of Middleport period sites have ever been discovered or their dimensions recorded. The magnitude of the disaster resulting from the introduced diseases which struck all of the Iroquoian peoples in the 1630's, particularly from 1634 to 1640, is difficult to grasp today but is best expressed by the first-hand observations of the French. With reference to the Huron, Father Jerome Lalemant in 1640 commented that "...in less than ten years they have become reduced from thirty thousand souls to ten thousand..." (JR XVII:223) and in 1639 Father LeJeune was reprimanded by a Huron "...that since we were in the country and had sown our doctrine there, one saw no longer aught but misfortune and misery, and no more old men were seen; that the whole country was going to decay and ruin; that, after having caused the death of all those in the quarter where we had first settled, we went throughout all the other villages to create the same havoc; that, if the cause of all these evils were not suppressed, they would see their entire nation annihilated" (JR XVII:115).Given the rapidity and devastation with which these diseases struck it should not be surprising that the archaeological evidence is perhaps a more reliable indicator of the pre-European populations than various reassessments based upon a study of the French documents.

The tribal compositions of both the Huron and Neutral confederacies of the 17th century were territorially discrete, forming distinct clusters within which sequential village movements were confined. As archaeological evidence increases it is becoming apparent that certain cultural differences existed between the sites in the discrete geographical tribal clusters; a not particularly surprising discovery. Tribal clustering of villages is undoubtedly an old pattern as is apparent in the various clusters of villages pertaining to earlier periods as far back as the 9th to 10th centuries.While the basic Ontario Iroquoian cultural pattern of palisaded villages containing multi-family longhouses, ossuary burial, a food economy based on corn and other crops, and a distinctive technology, was certainly established by the aforementioned dates it was not until the late 13th and early 14th centuries that the horticultural revolution became firmly entrenched.

The geographic locations of the various tribes constituting the Ontario Iroquois as well as the St.Lawrence Iroquois changed dramatically during the 16th century relative to what the French observed in the early 17th century. As was noted in Chapter 32, the St.Lawrence Iroquois of northern New York appear to have shifted into eastern Ontario and southern Québec. In the mid-16th century the Huron tribes along the north shore of Lake Ontario and its tributaries were shifting northward to eventually join the other Huron tribes resident in Huronia from approximately the late 13th century. Huron oral tradition ascribed the beginning of the Huron Confederacy to the mid-15th century involving a Southern Division tribe, the Attigneenongnahac, and a Northern Division tribe, the Attignawantan (Trigger 1976:163). Similarly, and roughly at the same time, the Neutral villages west of the Grand River nearly as far as Lake St.Clair contracted eastward to join the concentrations of villages at the western end of Lake Ontario. The Erie in New York State also removed themselves further to the south. Consideration of the reasons underlying these major population shifts will be examined in the section on **External relationships**. It is suspected that the formation of the League of the Iroquois in New York State, the Mohawk, Oneida, Onondaga, Cayuga, and Seneca, was likely the major catalyst underlying the strategic geographical relocation of its Iroquoian neighbours given that, unlike their neighbours, the League Iroquois did not shift from their ancestral lands. Even the Susquehannock, who originally occupied the upper Susquehanna River, moved south towards the mouth of the River where it empties into Chesapeake Bay on the Atlantic coast.

In summary, the central themes of cultural development of the Ontario Iroquois appear to have been as follows: during the first several centuries of Period V an apparent rapid transition from hunters-fishermen-incipient horticulturists led to palisaded, horticultural villages containing longhouses and other essential Iroquoian characteristics; at the end of the 13th century elements of the people east of and adjacent to the Niagara Escarpment called the Pickering complex conquered, dispersed, partially absorbed, and occupied the lands of the people west of the Escarpment called the Glen Meyer complex; from out of the relatively homogenous cultural base two sequential stages of development called Uren and Middleport or the Middle Ontario Iroquois stage arose; western elements of the Middle Ontario Iroquois also invaded the Niagara Frontier area of New York State to establish the Erie and the Wenro while other developments from the same relatively common cultural base led to the Huron-Tionnontaté to the east and north of the Niagara Escarpment and the Neutral to the west and south of the Escarpment (Wright

1966; Finlayson 1998). The proposed Pickering conquest of Glen Meyer has been a contentious issue and many archaeologists do not accept that it ever happened, preferring to see a gradual in place development beginning in AD 500 with the Princess Point complex leading to the Glen Meyer complex and the latter to the Neutral-Erie (Williamson 1998). A recent reappraisal of the archaeological evidence (Wright 1992) has only enhanced the conclusion that the dramatic cultural changes which took place at the end of the 13th century, changes with which most everyone is in agreement, was the product of a conquest to the west of the Escarpment and the colonization of the region by easterners. Such a major conquest subsumes an early ability to organize a number of villages into a confederacy structured for cooperative military purposes. Opposing communities which attempted to resist as isolated villages would have been no match for such a combined force. In short, what is being suggested is that at a quite early stage in the horticultural revolution some groups were already capable of the organizational genius for which Iroquoian peoples are justly famous. Dramatic social and political change were likely direct products of the horticultural revolution whereby "Increasing population densities, even in small-scale societies, appear to require more formal regulatory mechanisms and hence a more formal political organization" (Trigger 1981:3). With reference to the proposed late 13th century conquest, however, it would appear that some groups were quicker off the mark than others with dire consequences for the latter.

Cultural origins and descendants:

The ancestral predecessors of the Huron, Tionnontaté, Neutral, and Erie confederacies of the 17th century developed *in situ* in Southern Ontario with ancestral roots extending back to Period IV and likely Period III (Wright 1984). In this respect, these populations developed locally in a fashion similar to that of all of the Iroquoian population clusters of eastern North America. An in situ or in place origin of the northern Iroquoian populations was first proposed by James B. Griffin (1944) but was archaeologically demonstrated by Richard S. MacNeish (1952) through the use of pottery typology. This "in place" development of the Iroquoian tribes is still accepted by the majority of Iroquoianists despite a recent revisionist proposal, lacking substantive evidence, suggesting the northern Iroquoian people were all the product of a relatively recent migration out of the south (Snow 1995). Two major regional developments were involved; a Point Peninsula to Owasco to Oak Hill>Chance sequence for the New York State Iroquoians and a regionally distinctive Point Peninsula to Pickering to the Ontario Iroquois in Ontario.

The Ontario Iroquois tradition is a taxonomic device which outlines cultural developments in Ontario and part of adjacent New York State from approximately AD

800 until the time of European contact in the first half of the 17th century (Wright 1966). The tradition is represented by Early (AD 1000-1300), Middle (AD 1300-1400+) and Late (AD 1400+-European contact) periods or stages. In the initial synthesis it was suggested that two distinct Iroquoian peoples occupied either side of the Niagara Escarpment in Ontario with the Pickering complex to the east and the Glen Meyer complex to the west. The latter population was dispersed and, in part, absorbed by the former population towards the end of the 13th century (Wright and Anderson 1969; Wright 1992). It now is becoming increasingly likely that the Glen Meyer people were not Iroquoian but Algonquian (Finlayson 1998:260-261). This revised ethnic designation is based upon settlement pattern characteristics, technological, and mortuary evidence, all of which suggest that the Glen Meyer complex had more in common with the Central Algonquian Western Basin culture of the Lake St.Clair region of Ontario and adjacent Ohio and Michigan (Murphy and Ferris 1990). Under the circumstances, and with some degree of caution, Glen Meyer complex will be considered in Chapter 34 with the Western Basin culture. Determining ethnicity from archaeological materials, particularly in the distant past when the direct historical approach cannot be connected to early historical documentation which specifically identifies people and places, can be a hazardous task. It would be appropriate to distinguish such ethnic associations with an Indirect Historical Approach as an adjunct of the Direct Historical Approach. The removal of the Glen Meyer complex from the Ontario Iroquois tradition has no significant impact upon the construct itself since the Glen Meyer segment only pertained to the early portion of the tradition, was always treated as a discrete element in the Ontario Iroquois tradition, and was effectively eliminated as part of the said tradition prior to the end of the 13th century. In this respect, the Ontario Iroquois tradition is a continuous development out of a Pickering complex cultural base albeit with regional variations.

In a recent challenge to the *in situ* theory Dean Snow (1995) has advocated that the origins of the northern Iroquoian people stemmed from a early 10th century migration of Clemson Island people out of central Pennsylvania. This migration hypothesis relies heavily upon an assumed ability of historical linguistics to accurately gauge the passage of time based on dialect differentiation among related languages as well as a further assumption that considerable time was required for the interrelated developments of horticulture and matrilineality to be achieved. It also erroneously assumes that northern Iroquoian cultural roots related to a single development; that characteristic of New York State. Snow further suggests that there is archaeological evidence of a cultural discontinuity throughout Iroquoia around AD 900 that, in itself, would support the proposition of an intrusive southern culture into the region. There is an additional erroneous assumption that there was a common Point Peninsula complex culture base upon which the *in situ* theory was originally based by MacNeish (1952). Recent archaeological research has determined that there was considerable regional cultural variability during the first five hundred years of Period V (Chapdelaine 1989:19-22; Stothers 1977; Ritchie 1965:253-265; Wright 1984). Recent confirmation of the presence of corn horticulture by AD 500 in the lower Grand River Valley of Ontario (Crawford et al. 1997; Crawford and Smith 1996) has forced Snow to extend his migration hypothesis back to the 7th century (Snow 1996), an adjustment which is even less accommodating of the extant Clemson Island evidence from Pennsylvania in terms of both time depth and assemblage composition. Paradoxically, the earliest evidence of corn occurs in the Princess Point complex , which would develop into the Glen Meyer complex (Noble and Kenyon 1972), and ethnically may well have been Algonquian and not Iroquoian. While many archaeologists are likely to disagree with the assignment of an Algonquian ethnicity to the Glen Meyer complex others are beginning to question whether its ancestor, the Princess Point complex, was ethnically Iroquoian (Smith and Crawford 1995:67). The issue of Iroquoian migration versus in situ development has been extensively debated in a recent issue of Recherches amérindiennes au Québec (Chapdelaine 1992).

In the cultural development scenario favoured here the Point Peninsula hunters and gatherers of Period IV and their descendants during the first five hundred years of Period V in eastern Ontario gradually but progressively incorporated elements of horticulture into their food economy, first likely squash and sunflower followed by corn and lastly beans, to become the Pickering complex of the Early Ontario Iroquois tradition. From there developments led to the dispersal of the Glen Meyer complex and the late 13th and14th century occupation of their former territories west of the Niagara Escarpment. During this same century elements of the Middle Ontario Iroquois tradition occupied the adjacent region of western New York State. From this broad cultural base, albeit with regionalism already well established, developments led to the Huron-Tionnontaté and the Neutral-Erie encountered by the French in the early 17th century. This scenario has its weaknesses but still appears to best fit the archaeological evidence. Others would argue for cultural continuity from the Glen Meyer complex through Uren-Middleport into the Neutral-Erie (Williamson 1990). The Reid site, just north of Lake Erie (M. Wright 1978), has been held up as evidence for such cultural continuity. It appears, however, that at this particular site two Middleport period longhouses, houses 1 & 3, were built over earlier, smaller Glen Meyer complex houses. The resulting cultural mixture initiated the argument for local cultural continuity although it was a puzzle at the time why Pickering and Uren materials were lacking and why three of the radiocarbon dates fell into the 15th century. The site, located on a low knoll near the Lake, appears to have been a seasonal fish camp used initially by Glen Meyer people with a subsequent Middleport occupation.

The earliest Pickering village site which exhibits all of the essential characteristics of later Iroquoian sites, such as multi-family longhouses clustered within a palisade associated with other villages to form a regional cluster, bundle and ossuary burials, abundant evidence of corn horticulture, and an essentially Iroquoian style material culture dominated by pottery vessels, is the Miller site east of Toronto (Kenyon 1968). Kenyon's monograph was the first detailed description of a Pickering complex site although the earliest consideration of the Pickering complex was by Frank Ridley (1958), albeit based on an erroneous assumption that it was equivalent to the Glen Meyer complex. I concur with William C. Noble (1973:77) that the Miller site likely dates to AD 800. Material culture continuities with the preceding Point Peninsula complex of Period IV occur in the form of pottery decorative attributes, elements of the stone tool assemblage, and other traits. Such earlier technological traits were persistent. At the 12th century Boys site, close to the Miller site cluster, for example, a fragment of an unfinished soapstone platform pipe was recovered as well as a one-hole ground slate pendant (Reid 1975: Fig.32:11), both typical Point Peninsula complex items. Other researchers have also noted the continuities between the Point Peninsula and Pickering complexes (Kapches 1987:173; Finlayson 1998). The Point Peninsula habitation-mortuary site of Serpent Mounds on Rice Lake, Ontario had associated Pickering ossuary pits (Johnston 1968) suggesting a continuity in burial locale at a sacred place spanning ancestral hunters and gatherers and early horticulturists. Further, physical anthropological studies have suggested a genetic continuity from the earlier local populations into later populations (Ossenberg 1969:37). The study of discontinuous nonmetric cranial traits to assess the relationship between different populations and estimate biological distances between them suggests "...that the Late Woodland Iroquois were a product of biological admixture between the ancestors of distinct indigenous Middle Woodland populations representing Saugeen and Point Peninsula cultures..." (Molto 1983:vii). Finally, Iroquoian linguists favour a northern homeland for Proto-Iroquoian in the St.Lawrence Lowlands including the St.Lawrence Valley, Southern Ontario, upper New York State, and the Susquehanna Valley (Foster 1996:105-106). Dean Snow's proposal of a northward intrusion of Iroquoians is also in conflict with the linguistic evidence as it pertains to the Algonquian languages to the east and west of the hypothesized intrusion (Ibid:106).

Given the sudden cultural changes associated with the adoption of a horticultural economy the ability of radiocarbon readings to precisely place events in time is limited. This problem was noted with reference to the St.Lawrence Iroquois (Pendergast 1996). A recent effort to correlate archaeological sites with lake varves has the potential to significantly alter the present gross chronology suggested by radiocarbon dating (Finlayson 1998:373-375). Varves are biannual sedimentary layers (summer and winter) deposited in small, deep bodies of water where upper turbulence cannot disturb the fine-grained materials composing the varve. Thus, when a date is established anywhere on a specific varve in a column of varve deposits it is simply at matter of counting the individual varves, each of which represents one year. Establishing a date from which to count the varves can be accomplished by a number of means, one of which is to identify the pollen and seeds of European introduced plants in the varve column and correlate this with the documentary record of when the region in question was first occupied by European farmers. Varve dating, like tree ring dating, is an absolute dating method unlike the statistical dates provided by the radiocarbon method with their broad individual age brackets. At Crawford Lake palynological study of varve sediments suggest the following refined chronology for the Ontario Iroquois tradition in the area: Early Pickering (AD 1030-1180); Late Pickering (AD 1180-1330); Uren (AD 1330-1420); Middleport (1420-1504); and prehistoric Neutral (AD 1504-1550) (Finlayson 1998:v). The revised chronological span almost certainly has broader implications for Ontario Iroquois dating elsewhere but there will undoubtedly still be some regional variations such as the earlier evidence for Pickering east of Toronto. While an error factor is undoubtedly involved in the extrapolation of the absolutely dated varves to the Ontario Iroquois village sites believed to have been associated with specific segments of the varve chronology it should be less than that inherent in the radiocarbon method. The foregoing varve dates would expand the critical Middle Ontario Iroquois stage (Uren to Middleport) from AD 1300-1400 to AD 1330-1504 and allow greater latitude for both the numerous sites involved and the extensive cultural changes which took place during this time. There naturally are some reservations regarding the degree of precision of the association of the varve date correlations with the nearby Ontario Iroquois corn fields related to archaeological sites (Bryne and Finlayson 1998). At the late end of this revised chronology rare European items, estimated to date as early as AD 1550, have been reported but it is only around AD 1580 that small numbers of trade items actually begin to appear on sites (Fitzgerald et al. 1995). The foregoing is exclusive of the small fragment of Norse alloy recovered from a 12th century Pickering site east of Toronto (Wright 1994:49-50) which must have been traded in from the Gulf of St.Lawrence.

For those who still hold that radiocarbon dates can provide a precise chronology the following references are provided; Morlan (1999); Williamson (1990:Table 9.2) Dodd et al. (1990:Table 10.1), and Finlayson (1998).

Technology:

Ontario Iroquois archaeologically preserved objects of material culture consist mainly of fragments of pottery vessels and, to a lesser extent, pottery smoking pipes.Other minor pottery items are gaming discs and abraders made from body sherds, discoidal beads, and broken pipe stem beads. Under the circumstances it is understandable why pottery vessel typology and the seriation of same has attracted so much attention from archaeologists. Pottery vessel motifs, vessel form characteristics, and methods of decoration are more temporally and spatially sensitive indicators than most other elements of the technology. Pottery and pipe styles have been used to distinguish between the

WRIGHT (1966)	FINLAYSON (1998)	STAGE	
1650	1650		
	1644	LATE	
	1624		
	1604		*Historic Neutral*
		ONTARIO	
	1584		
	1564		
	1544	IROQUOIS	*Prehistoric/ Historic Neutral*
	1524		*Prehistoric Neutral*
1400	1504		
	1474	MIDDLE	
	1444		*Middleport*
		ONTARIO	
1350	1420		
	1390		
		IROQUOIS	*Uren*
	1360		
1300	1330		
	1300		
	1270		*Late Pickering*
		EARLY	
	1240		
	1210		
	1180	ONTARIO	*Early/Late Pickering*
	1150		
	1120		*Early Pickering*
	1090	IROQUOIS	
	1060		
	1030		

TABLE 25: PROPOSED REVISED CHRONOLOGY OF THE ONTARIO IROQUOIS TRADITION IN THE NIAGARA ESCARPMENT On the basis of a varve chronology correlated with the corn fields of Ontario Iroquois village occupations in the vicinity of pollen and plant material entrapment locales, like Crawford Lake, a finer-grained control of the chronology of the Ontario Iroquois tradition than is possible with radiocarbon method has been recently proposed (Finlayson 1998). Of particular importance is the fact that the varve-based chronology adds approximately 75 years to the former 100 year span proposed for the Middle Ontario Iroquois stage (Wright 1966). This increased time depth for one of the most critical stages of Ontario Iroquois development better accommodates events of the period and the numbers of sites; particularly Middleport substage sites, and will, in all likelihood, be reinforced by future palynological studies of varve deposits. (Adapted with permission from Table 1.7.1, *Revised chronology for sites of the Ontario Iroquois Tradition in the Crawford Lake area*, Finlayson 1998:372).

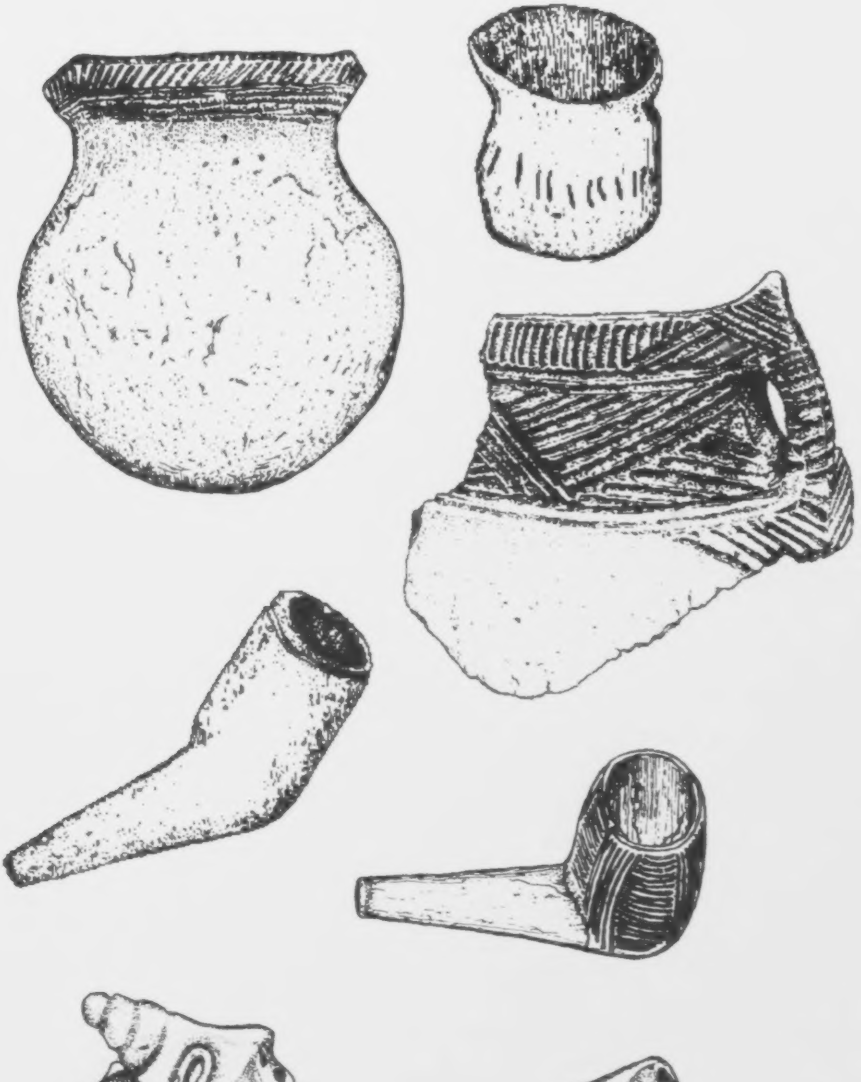


FIGURE 117: ONTARIO IROQUOIS POTTERY VESSELS AND PIPES The vessel to the left is typical of a widespread stylistic horizon which spread across most of Southern Ontario in the late 14th and 15th centuries and overlapped into New York State. Dating mainly to the 16th century the pottery rim fragment with a strap handle from the Ottawa Valley is likely an Algonquin specimen. Algonquian people adjacent to Iroquoian populations frequently shared in the same pottery traditions although generally distinctions can be made on the bases of the careful study of the totality of pottery attributes as opposed to a reliance upon pottery types, which, by relying upon a limited number of characteristics, tend to be simplistic constructs. The peaked elevations on both vessels, called castellations, are a common attribute whose purpose was either decorative or symbolic or, more likely both, but not functional. Children, specifically young girls learning the art of pottery manufacture produced small, crudely modelled pots which survive in the archaeological record such as the specimen to the right. Pottery pipe forms changed dramatically over time. At the left is an simple Early Ontario Iroquois form which resembles earlier soapstone specimens. Next is an example of the sophisticated pipes which suddenly appear in the Ontario Iroquois tradition in the mid-14th century. To the right is a human effigy pipe particularly characteristic of the European contact period in the first half of the 17th century. Called a Pinched-Face pipe such specimens are believed to have been associated with curing rituals. As has been noted, smoking was a religious activity steeped in ceremonial significance rather simply being a pleasurable drug habit. The three-ringed headdress on the aforementioned pipe, for example, could possibly symbolize the maintenance or restoration of balance, the symbolic significance of the number 3 among the Huron (J. Wright 1999:94-106). (Drawings by Mr. David W. Laverie. Scale variable)

archaeological assemblages characteristic of various Iroquoian tribal groups. Pottery analysis, with very few exceptions, does not pertain to complete vessels but rather to the fragments of vessels, particularly the upper rim portion of the vessel where most the decoration and form attributes appear. This emphasis on pottery, however, has tended to under emphasize other facets of technology, such as the differences between the bone tool industries of the Northern and Southern divisions of the Huron and the greater importance of chipped stone tools to the Neutral relative to the Huron. A detailed consideration of the extent of technological regionalism among the various tribes constituting the confederacies has been hampered until recently by a paucity of detailed published reports dealing with the total technology available to archaeological scrutiny. Studies considering various approaches to pottery vessel and pipe analyses are readily available (Emerson 1956;1968; Finlayson 1998; Smith 1997; Wright 1966). General syntheses, covering all aspects of culture including technology, are available for the Middle Ontario Iroquois stage (Uren-Middleport) (Dodd et al. 1990), the Huron (Ramsden 1990), and the Neutral (Lennox and Fitzgerald 1990). Rather than bury the general reader under a mountain of monographs and articles filled with masses of data pertaining to Iroquoian technology it is suggested that people concerned with the details so critical to archaeological interpretations refer to the above references and their bibliographies. Much of this massive body of data is now being computerized which should assist future manipulations but only if the classificatory units of the electronic data is carefully thought out before hand and the analytical criterion are broadly agreed upon. William D. Finlayson was the first archaeologist to apply computer technology to the processing and manipulation of the masses of both artifactual and settlement pattern data acquired from Iroquoian sites (Finlayson 1985:71-97 and appendices A to D).

While it has been speculated that Iroquoian pottery manufacture may have been a specialty craft rather than the production of pots being a skill required of every adult woman (Trigger 1981:29) such a possibility is weakened by both the ubiquitous distribution of pottery wastage and juvenile pottery across sites and the wide range of execution skills apparent in the vessels recovered from any single village. Pottery wastage consists of lumps, balls, and coils of both tempered and untempered, fired and unfired clay, while juvenile ceramics refer to the crude pottery vessel and pipe products of children learning the craft. The combined occurrences of juvenile pottery and pottery wastage relative to the number of pits in houses presented as percentage ratios at the Nodwell site (Wright 1974) were as follows: House 1 - 4.3:95.7 (n-93); House 2 - 36.4:63.6 (n-33); House 3 - 10.2:89.8 (n-88); House 4 - 4.3:94.7 (94); House 5 - 6.9:93.1 (n-29); House 6 - 34.9:74.1 (n-348); House 7 - 23.0:77.1 (n-214); House 8 - 23.1:76.9 (n-308); House 9 - 18.0:82.0 (n-167); House 10 - 22.6:77.4 (n-195); House 11 - 9.3:90.7 (n-108); House 12 - 10.0:90.0 (n-80); and pits outside of houses - 39.5:60.5 (n-114). As could be anticipated the houses with the largest number of pits, namely houses 6 to 10, consistently produced the greatest combined frequency of juvenile pottery fragments and pottery wastage. The exception is the ratio from pits outside of the houses, a not unexpected occurrence given that considerable pottery manufacture would have been done outside during the warmer months. It would appear from the above data that pottery manufacture and the training of children in the art was house lineage specific rather than being a specialized craft limited to specific houses. As one who has attempted to produce pottery vessels without instruction I can vouch for the complexity of the art which must have taken years for the practioners to acquire the necessary skills.

While the majority of Iroquoian pots were produced by a method called anvil-and-paddle whereby a ball of prepared clay was beaten and hand moulded into the desired shape, there is also evidence that particularly with very large vessels the rim-neck portion of the vessel was made separately from the body proper and was then grafted onto the body leaving a breakage pattern reminiscent of the coiling technique typical of Period IV pottery vessels. Both Saugeen and Point Peninsula complex vessels of Period IV also appear to have been sometimes produced by the paddle-and-anvil method suggesting that both methods of manufacture have a long history in Ontario. An exceptional technological discovery at the contact Neutral burial site of Grimsby was that some pots had been lined with a bituminous substance in order to water-proof them (Kenyon 1982:151).

A limitation inherent to many archaeological reports is a lack of consistency in the use of descriptive terms. This is particularly so with reference to pottery descriptions (Marois 1975; 1984) but also applies to stone tools (Marois et al. 1997). Such inconsistency is responsible for a breakdown in communication whereby the special meanings attached to certain terms as used locally make broader comparisons difficult and inconsistent or even impossible. In Iroquoian studies there has not even been an agreement on such a fundamental issue as whether pottery vessels or pottery rim sherds or some combination of the two should be the unit of analysis. Thus, MacNeish's Iroquois pottery type monograph (1952) was based upon the analysis of rim sherd fragments. Most recent studies, however, have relied upon the pottery vessel as the basic unit of analysis (Finlayson 1998; Wright 1994) whereby metrical and decorative attributes permit the assignment of a number of rim fragments from the same vessel to a count of 1 as opposed to a rim sherd analysis where a broken up vessel could account for 10 or more specimens Another problem is posed by what number of vessels are required from a site in order to assume that they represent an approximation of the totality or universe of vessels from the site. A landmark paper examining the issue of archaeological sampling on an Iroquoian site (Bellhouse and Finlayson 1979) has regrettably been largely ignored by most Iroquoian archaeologists. This study, involving a statistician and an archaeologist, demonstrated that artifactual materials were not randomly distributed and, therefore, statistical sampling methods premised on random distributions were not applicable. In recognition of the inherent problems with small samples it will be noted on Figure 118 that Finlayson clearly identifies the three sites with the smallest sample of vessels. There was good reasons for this as small samples can produce distorted results. Even large samples can present problems and particularly so if they come from a limited area of a site. Individual middens and houses are *not* mirror images of their neighbours given that the distribution of features, such as longhouses and middens, within a village are *not* a homogenous phenomena when it comes to the occurrences of artifact styles and their frequencies. A recent re-examination of the Nodwell site has thrown important light on this issue of sample size relative to specific archaeological contexts (Figure 119). Recognition of differences in the distribution frequencies of artifacts across the few completely excavated Ontario Iroquois sites to date is raising serious questions regarding the representative nature of the small samples extracted from most sites upon which general interpretations are based.

Iroquoian pottery smoking pipes represent one of the highest artistic achievements to be found north of Mexico. In addition to the human and animal effigies, non-effigy

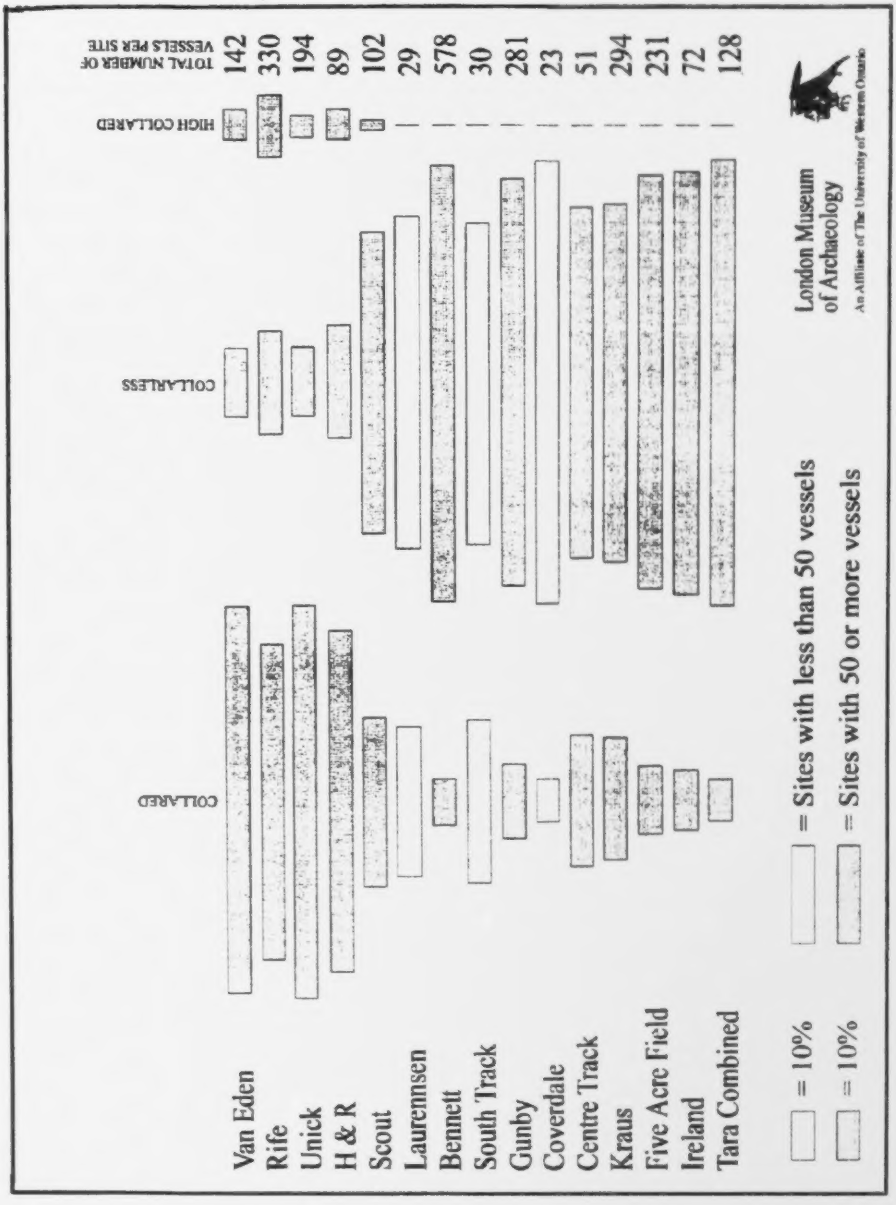

COLLARED
COLLARLESS
HIGH COLLARED
TOTAL NUMBER OF VESSELS PER SITE
Van Eden 142
Rife 330
Unick 194
H & R 89
Scout 102
Laurennsen 29
Bennett 578
South Track 30
Gunby 281
Coverdale 23
Centre Track 51
Kraus 294
Five Acre Field 231
Ireland 72
Tara Combined 128
= 10% = Sites with less than 50 vessels
= 10% = Sites with 50 or more vessels
London Museum of Archaeology
An Affiliate of The University of Western Ontario

FIGURE 118: A SERIATION CHART Seriation charts are useful as a means of arranging and comparing various aspects of information extracted from the mass of attribute data involved in pottery analysis. On the basis of evidence that certain attributes change through time it is possible to arrange a series of sites in sequential order based on the frequency trends of said attributes. In this chart, tracing changes in the frequencies of collared, collarless, and high collared vessels through a sequence of 15 sites spanning approximately 500 years in the Niagara Escarpment area, it can be seen that both collared and high collared vessels increase in frequencies at the expense of collarless vessels. A series of such charts, examining different pottery attributes, permit archaeologists to demarcate trends and, thus, estimate ages of sites and the probable sequence of village relocations in an area. Pottery seriation can also be used to contribute to an understanding of the construction history of single villages. The seriation of pottery from the stratified midden deposits of the16th century Keffer site of the Toronto area, for example, established a basis for determining which of the overlapping houses of the village site were early as opposed to late (Smith 1991:21, 23-24). (Reproduced with permission from Finlayson 1998, Fig.III.3.69)

forms also exhibit an exceptional grace of form and expertise in working with the malleable medium of clay. During the Early Ontario Iroquois tradition (Pickering) and the first portion of the Middle Ontario Iroquois sequence (Uren) (AD 1000-1350) pottery pipes are scarce, small, and relatively crude, being either plain or decorated with simple punctates and incised designs. I know of only one effigy pipe from this period (Andreae et al. 1998). Abruptly, around the beginning of the 14th century, sophisticated larger pipes with elaborate forms and a range of finely incised designs appear in greater numbers but still in association with the earlier crude pipe forms. Whether this appearance of sophisticated pipe forms represents a product of stimulus diffusion from New York State where similar pipes have a longer history, or is an indigenous development, is still not clear. Sophisticated pipes were being produced in areas of New York State as early as AD 1000 (Lenig 1965:56; Ritchie 1965:295) and would be the most parsimonious source for their diffusion into Ontario. Human and animal effigy forms make a general appearance during the latter half of the Middle Ontario Iroquois stage and become particularly frequent from the late 16th century up to the period of European contact. For detailed studies of Ontario Iroquois and other Iroquoian pipe forms see Noble (1992) and Mathews (1978;1980;1981;1981a). There is French documentation that smoking pipes were made by the men in both Huron and St.Lawrence Iroquois societies; a proposal strengthened by their gender-specific occurrence with adult males as grave offerings among the Neutral and Erie (Kenyon 1982; Parker 1907). The tobacco plant is also recorded as being grown and tended to by the men and not the women; men "...cultivate the fields of tobacco, and make the calumets or pipes which they use in smoking" (Boucher 1883:55). Smoking pipes were of religious significance rather than being simply secular objects used for individual pleasure. The tobacco grown was *Nicotiana*

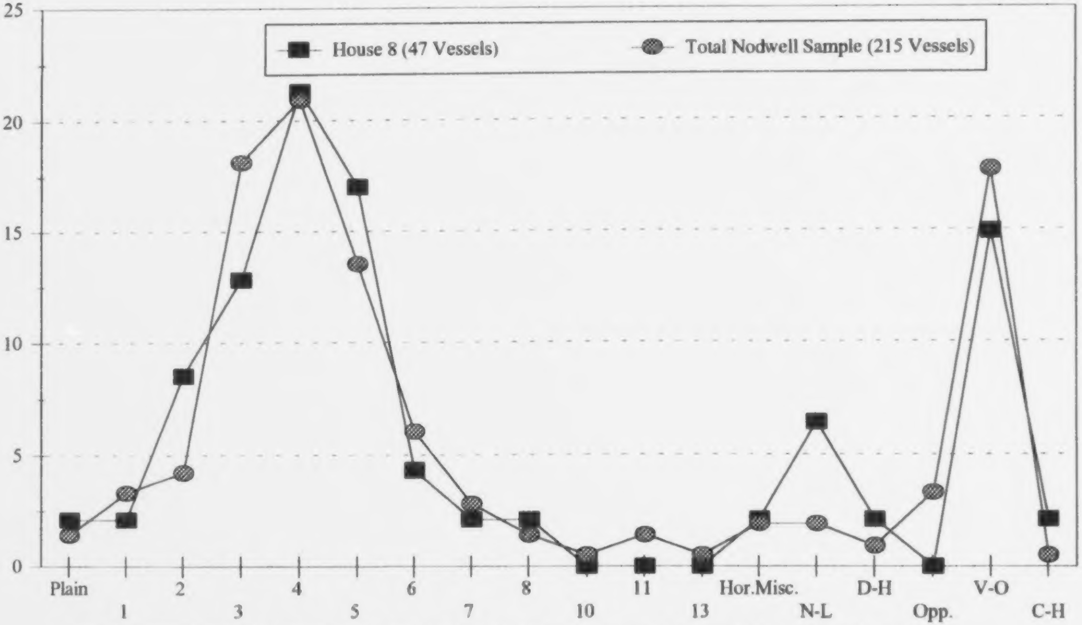


Figure 7: Comparison of the House 8 and Total Nodwell Site Sample. House 8 accounts for 21.9% of the total site sample. Y -axis numbers reflect percentage values of classified vessel motifs of the total House 8 and Nodwell Site samples, respectively. Abbreviations: Numbers refer to classification as Horizontal No. 1, etc.; Hor.Misc. = Horizontal Miscellaneous; N-L = Non-Line; D-H = Divided Horizontal; Opp. = Opposed; V-O = Vertical-Oblique; C-H = Cross Hatch.

FIGURE 119: ARE 50 POTTERY VESSELS ADEQUATE TO REFLECT THE TOTALITY OF POTTERY VESSELS FROM AN IROQUOIAN SITE? This histogram compares the frequencies of pottery vessel motifs from the Nodwell site House 8 with the totality of vessel motifs from the site. House 8 produced the largest sample of vessels with a total of 47 vessels and while there was considerable variability among the twelve longhouses from the site with smaller samples the House 8 sample, representing 22% of the total vessel motif sample from the site, essentially duplicated the universe of motif samples represented at this completely excavated village. This finding suggests that a sample of around 50 vessels *may* constitute an adequate reflection of the universe of vessel motifs from a site. While this was the case at the Nodwell site the assumption needs to be tested against a number of totally excavated villages in order to ascertain whether temporal or spatial factors need to be adjusted for and if the sample of 50 vessels has general application to Iroquoian sites and not just the Middle Ontario Iroquois stage of the Ontario Iroquois tradition. The histogram also clearly indicates that motif characteristics, like the number of horizontal lines, are not random doodlings but are structured entities which likely possessed symbolic significance. In addition, the House 8 sample not only duplicated the vessel motif frequencies from the totality of Nodwell site vessels but also duplicated the nearly 1000 vessels from seven other Middle Ontario Iroquois stage villages ranging from east of Toronto, to west to the Grand River, to Huronia on Georgian Bay, and the Lake Huron coast. (Reproduced with permission from J. Wright 1999:Fig.7 and Fig.15).

rustica and not the *Nicotiana tabacum* used today with the former species having a far greater hallucinogenic quality (Heizer 1987); a necessary state when attempting to commune with the supernatural. The present-day Iroquois of the Six Nations Reserve on the Grand River in Ontario still grow *Nicotiana rustica* for ceremonial purposes (Fenton 1998). Comparative studies of pottery vessel motifs and pipe motifs, at both the inter- and intra-site levels, indicate that the two styles, while sharing certain motif patterns, represented different decorative traditions (Woolfrey et al. 1976; J. Wright 1999). Motif differences between pots and pipes likely reflect the gender of the manufacturers and the function of the items with pottery vessels being female/secular/sacred and pottery pipes being male/sacred. The sacred nature of the two objects, pots and pipes, would have been somewhat different with pots being associated with powers related to collective sustenance and pipes with the attaining of individual powers and acquiring insights from the supernatural.

Unlike pottery styles and, to a lesser extent, pipe styles, the stone tool industry from all Iroquoian sites in northeastern North America is characterized by an essential sameness. Chipped stone arrowheads are generally simple isosceles triangular forms with side-notched forms of the foregoing being earlier. These late arrowhead forms were preceded by equilateral triangular points and stemmed forms of pre-horticultural ancestry. A range of scrapers, particularly end scrapers, are common as are simple thick flake wedges which would have functioned as burins and scraping tools to work materials like wood and bone or even to grind pigments into powder (Dr. William D. Finlayson: personal communication). Until recently wedges would have been consigned to the chipping detritus bag. Chipped stone drills tend to be rare as are stone beads, bifacially flaked knives, and stone pipes. As usual with stone age technologies by far the most common stone tool was the simple flake struck from a core and used as an expedient multi-purpose cutting-scraping-gouging tool. Stone metates, some portable and others large glacial erratics, and manos, used in combination for grinding parched corn into flour, are ubiquitous as are cobble hammerstones, polished stone adzes, anvil stones, sandstone shaft abraders and multi-purpose abraders, pebble pendants, and chisels. Fossils are frequently encountered and probably functioned as charms. Crinoid beads and the conical exoskeletons of certain extinct cephalopods are particularly common. Regional variability, of course, exists. Some of the stone effigy pipes which become common on early 17th century Neutral and Huron sites appear to represent trade items from the Tionnontaté (Lennox and Fitzgerald 1990:423). Neutral sites, situated in an area naturally rich in high quality chert, are characterized by a far greater use of chipped stone tools than their less fortunately endowed Huron neighbours. Even in Neutralia, however, the degree of site proximity to chert outcrops could dramatically effect the occurrences of small flakes relative to large flakes and bipolar cores reflecting a conservative versus profligate use of the resource (Lennox 1981:238-239). Exclusive of the simple, unmodified chert flake tool, the three most common chipped stone tools are scrapers, arrowheads, and wedges. More sophisticated analyses of the stone tool industry have been able to detect subtle regional differences as has been demonstrated at sites representing 650 years of cultural development in the Niagara Escarpment (Finlayson 1998:Chapter 7). It has been observed that "...the material culture assemblages of each community were distinctive enough to identify the village to which an individual belonged to or to which community a village or hamlet/satellite was affiliated" (Ibid:411).

Within the Pickering complex of the Early Ontario Iroquois stage there appears to be a poorly understood community split involving sites like Miller (1968), Boys (Reid 1975) and Hibou (MacDonald and Williamson 1995) to the east of Toronto and the Ireland I and Tara sites below the Niagara Escarpment (Finlayson 1998). The Hibou site would appear, in terms of pottery characteristics, to have more in common with the distant Escarpment sites than with its immediate neighbours. If, as suspected, the Miller>Boys>Bennett sequence from AD 800 to1200 stemmed from the Rice Lake region then there could have been a north-south community separation which could possibly explain the Hibou site similarities to sites north of Hamilton. The complexities involved in an understanding of the development of discrete communities of villages and their relationships with one another, as well as their movements through time, is most definitely in its infancy. Indeed, the first study involving the Ontario Iroquois which could be described as a detailed study of communities and their interrelationships has only been recently published (Finlayson 1998).

The nature of the bone tool industry appears to be more regional than was the case with the stone tool industry. Items like bone awls, beads, unilaterally barbed harpoons, barbs for composite fishhooks, antler stone tool flakers, flutes, beaver incisor knives, conical arrowheads, netting needles, tubes, bodkins, and bracelets appear to occur on all Iroquoian sites, albeit styles and frequencies change with time. Netting needles, manufactured from thin naturally curved deer ribs with a drilled central perforation, were likely used in the production of twined fabrics and nets. Rare items are daggers and skull disc rattles manufactured from human bone, turtle shell rattles, and antler hair pieces frequently called combs. Worked deer toe bones occur on all sites but here clear stylistic differences pertain relative to their distributions. While the so-called cup-and-pin variety, which is an early form, occurs on all sites the ground and faceted varieties are more variable in their occurrences being very common on16th century Southern Division Huron sites along the north shore of Lake Ontario but essentially absent from contemporary Northern Division Huron sites in Huronia proper. In addition they are rare on most Neutral sites. Worked deer toe bones are one of the few non-pottery traits which has been subjected to detailed study (McCullough 1978). The cup-and-pin variety of deer toe bone involved the cutting off of the proximal end of the toe bone and drilling a hole through the distal end. The recovery of such objects, found associated in pairs at the Nodwell site (Wright1974:100,116,131,142,155), suggested that their function was as toggles on either end of a lashing cord rather than relating to the cup-and-pin game, per se. Lashing cords would have been used for holding garments and parcels together as well as other functions requiring lashing. On the other hand, the great variety of ground and faceted deer toe bones with their patterned burned impressions suggest multi-purpose uses including that of gaming pieces (McCullough 1978).

Exotic items, like marine shell beads and pendants and native copper awls, beads, and knives, are rarely encountered on Ontario Iroquois sites until the late 16th and early 17th centuries when conch shell beads and pendants from the Atlantic coast become increasingly common (Pendergast 1989). On some of the earlier village sites, like the 9th century Miller site, such exotics could well represent a carry-over from the expansive trade networks of the previous period. Native copper items were particularly common at the Nodwell site (Wright 1974) and it was speculated that the village's isolated location on the Lake Huron coast related to its participation in a western exchange system with Algonquian communities with access to the Lake Superior copper deposits and knowledge of copper tool manufacturing.

Evidence of plant use from Ontario Iroquois sites is understandably rare except for the abundant charcoal from wood fires. When this charcoal is identified as to species it

	MacLeod		Copeland		Lawson		Roebuck	
	f	%	f	%	f	%	f	%
POTTERY								
Vessels	924	62.3	2643	52.2	1840	54.2	4888	62.8
Juvenile vessels	24	1.6	539	10.6	P		P	
Gaming discs	2	0.1	P		-	-	319	4.1
Pipes	209	14.1	815	16.1	194	5.7	343	4.4
Juvenile pipes	9	0.6	P		P		P	
Beads	-	-	-	-	-	-	32	0.4
STONE								
Arrowheads	5	0.3	75	1.5	100	2.9	10	0.1
Scrapers	2	0.1	114	2.3	74	2.2	5	0.1
Biface knives	1	0.1	-	-	23	0.7	-	-
Celts	126	8.5	90	1.8	53	1.6	100	1.3
Beads	10	0.7	5	0.1	-	-	91	1.2
Abraders	9	0.6	16	0.3	100	2.9	37	0.5
Hammerstones	5	0.3	55	1.1	78	2.3	12	0.2
Drilled stones	-	-	16	0.3	-	-	-	-
Anvilstones	-	-	6	0.1	10	0.3	P	
Net sinkers	-	-	-	-	33	1.0	-	-
Metates	-	-	-	-	10	0.3	50	0.6
Manos	-	-	-	-	3	0.1	40	0.5
Pendants	-	-	-	-	15	0.4	-	-
Discs	-	-	-	-	-	-	18	0.2
BONE AND ANTLER								
Beads	98	6.6	255	5.0	55	1.6	43	0.6
Deer phalanges	28	1.9	75	1.5	40	1.2	333	4.3
Awls	21	1.4	304	6.0	405	11.9	1191	15.3
Rodent incisors	6	0.4	P		16	0.5	68	0.9
Netting needles	4	0.3	16	0.3	1	0.0	37	0.5
Bodkins	-	-	30	0.6	-	-	-	-
Pendants	-	-	4	0.1	-	-	6	0.1
Fishhooks	-	-	3	0.1	-	-	22	0.3
Flakers	-	-	2	-	53	1.6	-	-
Arrowheads	-	-	-	-	3	0.1	29	0.4
Chisels	-	-	-	-	10	0.3	7	0.1
Human skull rattles	-	-	-	-	4	0.1	10	0.1
Pipes	-	-	-	-	8	0.2	2	-
Deer scapulae pipes	-	-	-	-	-	-	29	0.4
Bear canine knives	-	-	-	-	-	-	14	0.2
Gorges	-	-	-	-	-	-	39	0.5

Continued on next page

SHELL								
Beads	1	0.1	P		8	0.2	6	0.1
Clam shell knives	-	-	P		261	7.7	3	-
TOTALS	**1484**	**100.0**	**5063**	**100.0**	**3397**	**100.0**	**7784**	**100.2**

TABLE 26: COMPARISON OF THE ARTIFACT ASSEMBLAGES FROM FOUR 16TH CENTURY ONTARIO IROQUOIS SITES The MacLeod site is a Southern Division Huron village situated within the city of Oshawa immediately east of Toronto (Reed 1993); the Copeland site is a Northern Division Huron site located in Huronia (Channen and Clarke 1965); the Lawson site is a Neutral village situated within the City of London (Wintemberg 1939); and the Roebuck site (Wintemberg 1936) is a St.Lawrence Iroquois village in eastern Ontario and is included on the Table for comparative purposes. Rare categories of artifacts numbering less than 10 specimens collectively from the four sites have been excluded from the Table. The letter "P" indicates that the artifact category in question was likely present but was either unquantified or unqualified.

tends to be maple (*Acer sp.*), beech (*Fagus grandifolia*), and ash (*Fraxinus sp.*) (Monckton 1998:115; Turton 1998:149), all tree species whose wood has a high heat output without the hazardous spark prone characteristics of soft woods like the conifers; an important consideration when heating and cooking within bark sheathed dwellings. Textiles occasionally survive, as at the French Huron mission of Sainte Marie I where a probable bag was produced using the twined weave technique with a coarse warp of two ply thread and a two ply finer thread for the weft (Kidd 1949:159-160). At the contact period Grimsby Neutral cemetery twined cedar bark matting was preserved as well as a woven chicory stem bag and mat (Kenyon 1982:59-60,62). According to botanists, chicory (*Cichorium intybus*) was introduced to the Western Hemisphere from Eurasia (Scoggan 1979:1522) but there is still limited evidence from ethnobotany regarding its use which leaves open the door for possible multiple origins for the specie (Moerman 1998:161-162). Under the circumstances, either the botanical record or the species identification could be in error or the object was indeed of European manufacture. The latter is not an impossibility given the identification of domesticated horse hair rope from the same site. Cattail (*Typha latifolia and Scirpus sp.*) has been reported from a number of sites (Cooper and Robertson 1993:Table9; Williamson et al. 1998:118). Not only do these plants have an edible root but their seed heads were used as the equivalent of toilet paper for young children as well as a snake bite poultice by the Iroquois (Moerman 1998:523).

Ignoring typological nuances, it is apparent that all of the sites shared similar tool kits. Pottery vessels constituted more than half of the total assemblage from all of the sites. Frequencies of juvenile vessels and pipes are undoubtedly distorted due to non-recognition or by differing reporting criterion. Pottery pipes occurred with similar frequencies for the two Huron villages but were much lower in frequencies for both the Neutral and St.Lawrence Iroquois sites. Pottery gaming discs are mainly a St.Lawrence Iroquois trait as are some of the bone items like deer scapulae pipes, antler and bone arrowheads, and bear canine knives. Similarly, net sinkers were only reported from the Neutral village. The central purpose of Table 26 is to provide the reader with an impression of the tool kit available to archaeologists. As with any table drawn from a number of different reports there are weaknesses in attempting to achieve an equivalence of categories from the data provided by the different researchers. Some additional qualifications are as follows: the high incidence of celts from the MacLeod site relate to the fact that fragments were also counted; and deer phalanges varieties could not be reduced to the two major stylistic categories. Rodent incisors generally pertain to beaver although porcupine incisors were also used and bodkins are elaborately finished awl-like objects with a carved proximal head and likely functioned as hairpieces or lashing pins. Minor items numbering less than 10 specimens from the sum of the four sites were as follows: stone pendants; drills, a polished stone gorget; stone pipes; bone spatulae; worked dog phalanges; decorated wristlets; an antler pipe; antler hair pieces; a bone tube; turtle shell rattles; unilaterally barbed harpoons (bilaterally barbed harpoons were included with the bone arrowheads); antler hoes; deer mandible corn huskers; whistles; modelled clay discs; and a wooden spindle-whorl.

Subsistence:

Horticulture was the economic foundation of all of the Iroquoian peoples of eastern North America. The introduction of cultigens from the south eventually led to a cultural revolution which dramatically modified the way of life of the indigenous hunters and gatherers. While corn (*Zea mays*) was the most important crop its importance must be balanced in relationship to its major sister crops of beans (*Phaseolus vulgaris*) and squash (*Cucurbita pepo*). The Iroquois referred to corn, beans, and squash as the Three Sisters as sisters would always be found together in the same longhouse like the three cultigens were found together in the field. Tobacco (*Nicotiana rustica*) was grown for ceremonial purposes and sunflower (*Helianthus annuus*) would likely have been important for cosmetic and ceremonial purposes as well as nutrition. The nutritional aspects of plant foods are of paramount importance. Grains, fruit, and vegetables, for example, are high in carbohydrates but limited in protein which comes mainly from meat, fish, and eggs. Beans and squash are both high in calcium and phosphorous while sunflower seeds are very rich in iron. Sunflower products, along with animal protein, would have provided protection against pellagra, a Vitamin B complex deficiency common to people with a diet based upon corn. Storing qualities of foods were also important. Dried seeds and meat, for example, store well and retain their nutritional qualities. Conrad Heidenreich

(1971) was the first scholar to attempt to shed light on Huron subsistence by proposing testable hypotheses relating to matters such as soil fertility, crop yields, game-firewood availability, land clearing, and village relocations. For good general studies of plant food production and nutrition which have, in part, application to the Ontario Iroquois see Ford (1985) and Wing and Brown (1979).

Squash was undoubtedly being grown much earlier than corn in Ontario even though corn's earliest recorded presence is currently dated to AD 500 in the lower Grand River Valley (Crawford et al. 1997). In contrast, squash dated to 500 BC was recovered from the Schultz site in Michigan (Fitting 1972) and the Leimbach site in Ohio (Shane 1967), both sites being immediately adjacent to Southern Ontario. It came as a further surprise to archaeologists when squash recovered under excellent stratigraphic conditions at the Sharrow site in central Maine dated to 4,000 BC (Petersen and Sidell 1996). Squash is currently the earliest known plant cultigen in the Western Hemisphere being dated to 10,000 years ago in Mexico (Smith 1997). While it has been suggested that this particular cultigen was probably only of minor importance as a food, despite being high in protein, amino acids, potassium and calories, particularly when dried (King 1985:77), the number of ethnographically recorded squash recipes among the Iroquois, its association with ceremonial feasts (Waugh 1916), and being one of the Three Sisters along with corn and beans, would suggest otherwise. Further, the fact that squash seeds have a high oil content and were likely highly processed like sunflower seeds probably accounts for their limited recovery from archaeological deposits. It was noted that among the Huron "...the squashes last sometimes four or five months, and are so abundant that they can be had almost for nothing" (JR X:103). Beans, on the other hand, appear to represent a late introduction into Ontario, appearing around AD 1000, 500 years after corn. The cooking and storing methods applied to beans, like squash and sunflower, were not particularly amenable to archaeological preservation unlike the situation with corn. Preservation problems with beans is reinforced by the high frequency of the cultigen from the Huron Auger site where there is evidence that the village was destroyed by fire and the abundant bean stocks were accidentally carbonised as a result of the accidental conflagration (Monckton 1992:37). Beans and squash were generally eaten fresh or dried (Waugh 1916:108-109, 114-115) and were not subjected to parching for flour production and storage purposes like corn, the latter process being amenable to accidental charring and thus archaeological preservation. Like squash, sunflower appears to have been one of the earliest cultigens (Smith 1998). A sunflower seed was recovered from a pit at the Dawson Creek site on Rice Lake, Ontario which dated to 600 BC (Jackson 1983). When tobacco was introduced is difficult to assess at this time. Smoking pipes are not necessarily evidence for the use of tobacco as a number of other plants were smoked for a wide range of ceremonial purposes (Yarnell 1964). For example, purslane has been found in the contents of a pipe bowl from the contact Neutral Hood site (Lennox 1984:129). Purslane or Portulaca (*Portulaca oleracea*) was used among the Iroquois as a poultice for burns and bruises but also as a cure "...if someone has given you bad medicine" (Moerman 1986:366). It's presence in a pipe bowl possibly reflects the latter function whereby a supplication can be sent to the Creator in the form of smoke. This an appropriate place to observe that most ethnobontantists working in Ontario have focussed on the caloric contribution of plants to the diet and have tended to ignore the ceremonial and medicinal contributions to native societies even though good general reference sources exist for Canada and adjacent regions, such as Frances Densmore (1974), Daniel E. Moerman (1986, 1998), and Nancy J. Turner et al. (1990). This is also an appropriate place to note that "Of all the therapeutic compounds brought from the world's living pharmacy into our modern drugstores for uses as varied as contraceptives to cancer treatments, few, if any, were truly discovered by university-trained botanists. These plants were "discovered" by botanists much as America was "discovered" by Columbus - in both cases, the Indians got there first." (Plotkin 1993:8). As Dean R. Snow appropriately noted in the Forward to James W. Herrick's volume on Iroquois medical botany (1995:x), relative to the importance of plant information, that "To understand them is to understand part of the Iroquois cosmos." The same could be said for all native botanical knowledge where medicine and ritual were inseparable from the cosmos.

The archaeological field method of flotation, capable of recovering the tiny tobacco seeds, is only a recent standard field recovery technique. In addition to tobacco, recovery of oil-rich seed plants like lambsquarters (*Chenopodium sp.*), amaranth (*Amaranthus sp.*), Maygrass (*Phalaris caroliniana sp.*), knotweed (*Polygonum sp.*), and marsh elder (*Iva xanthifolia*) (Mason 1981:205; Smith 1987:37) is possible. The foregoing plants appear to have had a long history of domestication in certain areas of North America, particularly within the Mississippi River drainage.

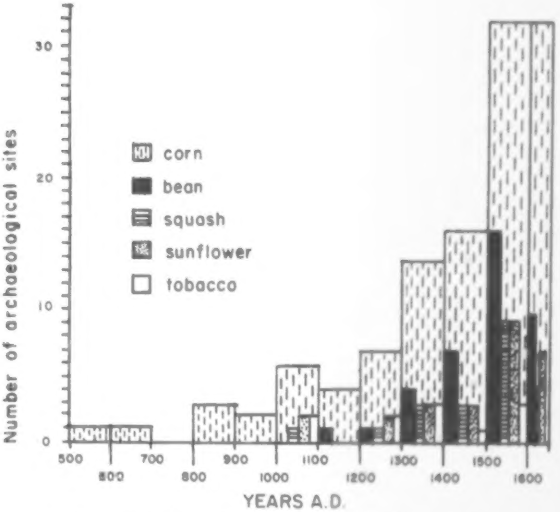
There would have been considerable experimentation with early plant domestication long before corn appeared on the scene and, "As a rule, the adoption of plant food production appears to have been a slow, erratic, and a regionally specific process" (Wright 1999:640). It was the adoption of corn, however, which completed the transformation of earlier hunting and gathering based economies to primarily horticulturally based ones. In addition to the direct archaeological evidence of corn in parts of Ontario by AD 500 (Crawford et al.1997) stable carbon isotopes recorded in human bone from Southern Ontario indicate that corn was increasing in importance in the diet from approximately AD 650 to 1250. During the same time period there is little evidence of a corresponding change in nitrogen isotope values although the latter does decrease after AD 1350 reflecting a reduction in the contribution of animal protein to the diet (Katzenberg et al. 1995). The foregoing article also outlines the applications and limitations of stable isotope studies to infer past diets. Despite its growing importance the adoption of corn was an erratic and gradual process which appeared in different areas at different times. It was not until the 13th and 14th centuries that it was clearly the economic mainstay of all Iroquoian people (Chapdelaine 1993). The impact of corn, complimented by the other cultigens, is apparent in the rapid changes in settlement patterns and land use. This included the appearance of the multi-family longhouse and palisaded villages. Two plausible reasons underlying the rapid adoption of corn and concomitant social changes were the need to reduce reliance upon late winter hunting by having a trustworthy storable food reserve (Trigger 1981:24) and the increasing importance of the matrilineal lineages which required permanent residence in order to plant, grow, tend, and process the crop (Clermont 1989:124-125). The latter point begs the question, 'what came first, the chicken or the egg?' or, to turn a phase, 'matrilineality or horticulture?' I suspect that the transition from a presumably patrilineal society to a matrilineal society was a long process which was accelerated as women increasingly became the main food producers and that their changing economic role in society enhanced both their prestige and authority and thus the power to influence major social changes. With reference to diffusion of corn into Iroquoia recent evidence indicates the early importance of corn in the diet of people in the Mississippi Valley (Riley et al. 1994) which was a likely source of origin of corn for the Iroquois. Corn likely entered Southern Ontario via the western end of Lake Erie around AD 500 (Crawford et al. 1997:Table 1), if not earlier. By the 9th century, at sites like the Miller site east of Toronto (Kenyon 1968), it had become a significant element in the diet. The earliest corn, however, is associated with the Princess Point complex in the Hamilton area at the western end of Lake Ontario, along the Grand River and on Long Point on the north shore of Lake Erie (Crawford and Smith 1996:Fig.1). Early sites are situated on riverine flood plains and are believed to have been occupied from late spring to summer (Stothers 1977:316). Information on the so-called Couture complex west of the Niagara Escarpment, which would span the transition from Period IV to V, is simply too limited to throw light on diffusion routes (Spence et al. 1990:144-148). While it is increasingly clear that the Princess Point complex developed into the Glen Meyer complex, where the former originally came from is still a matter of debate involving proposals of an in situ development from the Saugeen complex of Period IV or a population intrusion out of Michigan/Ohio. Apparent discontinuities in the archaeological chronology at this time could suggest a population intrusion. On the other hand, local cultural continuity could be masked by the widespread northeastern North America phenomenon of cord-wrapped stick replacing dentate stamp as the major pottery decorative technique as well as the replacement of the earlier spear thrower weapon system by the bow and arrow, both items of technologies which archaeologists rely heavily upon to interpret the past. While the evidence regarding origins is still equivocal it is suggested here that the Princess Point complex was a local development rather than being the product of an intruding population. This is suggested by the nature of the stone tool assemblage and the fact that the pottery motifs and design locations replicate those of the Period IV local Saugeen complex (Finlayson 1977:611-612; Wilson n.d.). If, as is being suggested, the Glen Meyer complex is ethnically Algonquian rather than Iroquoian then the same ethnic stamp must apply to its Princess Point ancestor. If this should be the case, then there was an apparently rapid transfer of corn to the Iroquoian Pickering complex east of the Niagara Escarpment.

Strontium content in human bone has been used to calculate the relative proportions of animal and plant protein in past diets. In Southern Ontario there is little evidence of change in these two protein sources over time suggesting that an increasing reliance upon low strontium corn rather than an earlier, varied gathered food diet, gave rise to the lower recorded strontium levels. Nitrogen isotope analysis support the evidence from strontium in bone for a decreasing degree of variety in the diet (Katzenberg and Schwarcz 1986). Even the introduction of beans was apparently insufficient to depress the nitrogen isotope ratios (Ibid:19).

Even though the survival of plant cultigens in archaeological deposits is due to accidental charring, confounded by the fact that some cultigens possess more robust characteristics relative to surviving heat, such as corn, in comparison to fragile squash seeds, it is clear that there is a marked increase in such materials on sites, particularly at the beginning of the 15th century (Wright and Fecteau 1987:Plate 12, graph). It took 900 years to achieve this level of archaeological clarity, which, it is cautioned, still does not necessarily represent an accurate reflection of what actually happened regarding the incorporation of plant cultigens into the food economy. By the 13th century all five cultigens, corn-beans-squash-sunflower-tobacco, were being grown at the late Pickering complex Gunby site (Dodd et al. 1990:350). The fluorescence of large villages dependant upon horticultural products, however, was not to be fully achieved in Ontario until the Middle Ontario Iroquois stage in the 14th and 15th centuries.

French chroniclers record that, while the women were responsible for the planting, tending, and harvesting of crops, other than tobacco, the men were responsible for clearing the land using a process commonly referred to as "slash-and-burn". For Iroquoian peoples a more appropriate term would be "girdling-and-burning". The typical virgin maple-beech forest would have had limited undergrowth due to the dense canopy and the only way for people with a stone age technology to remove said canopy in order to permit the sunlight to reach the crops was through killing the mature trees by girdling them. Anyone attempting to attack a one metre diameter maple or beech tree with a stone adze would quickly realize the absolute futility of the exercise with one tree much less hundreds of such forest giants. An Iroquoian farm field would bear little resemblance to a current farm field. The former fields would have been initially covered by the standing skeletons of innumerable large trees. Falling dead limbs would then have been used as firewood for both the village and to remove the dead trees and stumps through burning. There is even a Seneca prayer which was intended to protect children from the falling branches of dead trees in the corn fields (Parker 1910:22). In addition to the labour involved in the preparation of fields allowances had to be made for the possibilities of drought or insect infestations which could result in markedly reduced crop yields or, if suffered early in the planting cycle, require a replanting. Thus more crops were grown than necessary for sustenance as insurance and surpluses could always be bartered with other people for other resources. Despite this precautionary step crop failures and associated famine were still not unknown (Tooker 1991:60-62).

Attempts to estimate the locations of ancient corn fields have been based upon 18th and 19th century European records of stands of even-aged white pine trees. Pines were required by the British navy for ship construction and their locales and harvesting were documented and controlled by government officials. In addition, when European farmers cleared white pine from their fields the stumps were used as fencing and being rich in resin were exceptionally resistant to the natural processes of decay (Finlayson 1998:Fig.1.2.18). By correlating the colonial records of the locations of once extant pine stands with pine stump fence lines an approximation of earlier Iroquoian agricultural clearances becomes possible (Bowman 1979). White pine (*Pinus strobus*) is what is called a pioneer tree in that it rapidly occupies abandoned clearings thus the assumption that even-aged stands of pine mark where an ancient farm clearing once existed. The exceptional varve chronological sequence at Crawford Lake indicated eight forest clearance phases ranging from AD 1310-1334 to 1645-1669 (Byrne and Finlayson 1998:Table 1.2.1). Varves are the thin sedimentary layers deposited annually in protected, deep lakes and can be accurately counted in terms of absolute years. Often preserved in the varves are plant pollens and macrofossils like seeds and charcoal. In the varve sequence at Crawford Lake beech and maple pollen is replaced during the clearing intervals by oak and pine, both of which are pioneer tree species. If the ten village relocations near the Crawford Lake are accurate and indeed correlate with the abandoned fields inferred from the varve record then such relocations averaged more than 30 years (Finlayson 1998:Fig.1.2.11 and Table 1.7.1). Iroquoian villages were periodically relocated due to a number of reasons, such as the reduced availability of good fire wood, soil exhaustion, or political/social stress. A high instance of portulaca or purslane (*Portulaca spp.*) seeds, an edible green, in the pollen cores has been used to explain the associated presence of corn pollen. The recovery of the foregoing plant from a number of pre-European site contexts in Ontario belies the suggestion that it was either introduced from southern Europe or northern Africa (Royer and Dickinson 1999:352) or pertains to known indigenous species that are far to the south and west of eastern North America (Fernald 1970; Scoggan1978). The foregoing is another instance where archaeology can contribute pertinent species distributions to other disciplines. Corn pollen is relatively heavy and can only be distributed for a maximum of 50 m by wind. It has been speculated



Cultigen reports for Ontario archaeological sites

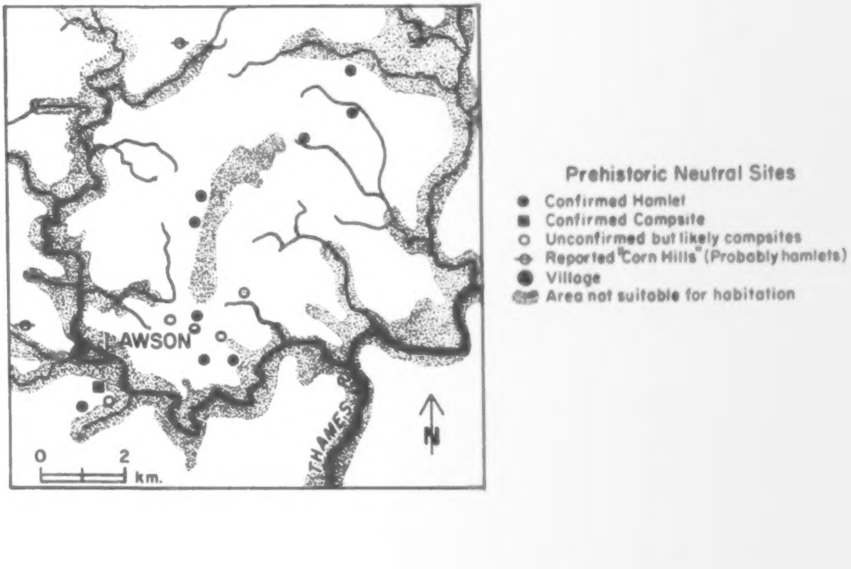

AWSON
THAMES R.
N
0
2
km.
Prehistoric Neutral Sites
● Confirmed Hamlet
■ Confirmed Campsite
○ Unconfirmed but likely campsites
-⊕- Reported "Corn Hills" (Probably hamlets)
● Village
Area not suitable for habitation

FIGURE 120: CULTIGEN ADOPTION THROUGH TIME IN ONTARIO IROQUOIS CULTURE AND THE GEOGRAPHICAL RELATIONSHIP OF 16TH CENTURY NEUTRAL FARMING CABIN SITES TO A MAJOR VILLAGE The histogram indicates the exponential increase in the use of cultigens through time while the map illustrates the distribution of farming cabin sites, usually represented by a single isolated longhouse, and other special purpose sites, around the 2 hectare (5 acres) Lawson village site in London, Ontario. Cultural resource management excavations associated with urban expansion around the city of London is largely responsible for locating these small, field tending sites of low archaeological visibility outside of the main village (Lawson site and area settlement pattern information provided by Dr. Robert J. Pearce, London Museum of Archaeology; drawings by Mr. David W. Laverie, histogram from Plate 12, Historical Atlas of Canada, Vol.I, Harris and Matthews 1987)

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that the portulaca gathered in the corn fields was taken to Crawford Lake to wash, preparatory for the pot, and that adhering corn pollen was thus deposited in the water (Turton et al. 1998). Similarly, an abundance of sunflower husks and seed fragments from the varved sediments of both the Crawford and Miller lakes suggests winnowing in water to free the nutlet for eventual oil and meal production (Turton 1998:148).

Abandoned corn fields would have favoured growth of important nut producing pioneer species like white and red oak (*Quercus alba and Quercus rubra*), butternut (*Juglans cinerea),* and hickory (*Carya cordiformis*). Wild plant resources in the Crawford Lake area were determined by a detailed botanical survey which recorded many of the species that would have been particularly useful as back-up foods in instances of reduced corn production (Byrne 1998). Information from nine villages in the Crawford Lake area, dating from AD 1000 to precontact Neutral, indicated that of the wild plant foods sumac, raspberry, and strawberry were generally the most common with occasional occurrences of bush honeysuckle, elderberry, lambquarters, and hawthorn (Finlayson 1998:Table II.2.1 to II.2.9, inclusive). Fruit from plants like hawthorn (*Crataegus sp.*) are high in Vitamin C, as are dried berries, and were likely most important as a form of winter vitamin pill. Iroquoian people ate a wide range of plant greens, processed bark, roots, fungi, nuts, and fruits (Waugh 1916:117-129). Most of these items were likely cooked in a soup or stew of mixed ingredients and would leave little or no archaeological trace. This likelihood is not only supported by ethnographic records but by the fact that animal bone from sites rarely exhibit butchering marks suggesting that most meats were cooked by boiling (Stewart 1991:95).

Locations of various plant remains across a site can be informative. At the 16th century Parsons site in Toronto fleshy fruits and greens/grains were recovered mainly from features outside of the houses suggesting warm weather activity (Monckton

1998:119). Similarly, berries tended to be most abundant in a temporary, warm-weather work shed put up by the construction crew building the new village (House 5) and in pits outside of the houses at the Nodwell site (Wright 1974:292). Attention, however, must be payed to the characteristics of particular species. Strawberries, for example, are a spring fruit while raspberries and elderberries are summer fruits and the latter are more likely to have been preserved in a dried form for winter consumption and thus are potentially unreliable seasonal indicators. Cultigens were found mainly within the confines of the houses at the Parsons site but this pattern did not occur at the Nodwell site. Cat-tail (*Typha latifolia*) seeds were found both outside and within the Parsons site houses. As the soft, woolly cat-tail seed heads were probably used as a form of toilet paper on young children such a distribution is not surprising.

Often subsistence practices can be inferred without reference to actual carbonised specimens. This usually applies to settlement pattern characteristics but can also pertain to other phenomenon. A common occurrence in the interior of longhouses are pits characterized by circular, ca 0.45 to 0.6 m diameters with basin shaped bottoms filled with solid white ash and nothing else other than the rare, minute scrap of carbonised bone. It would appear that the ash had been purposefully sieved to remove everything but the ash. From my experience, such pits tend to be centred around the central hearths. The contents of such pits are speculated to have played a role in the suppression of the nutritional disease pellagra, caused by a diet deficiency in niacin, a component of Vitamin B3, which effects the body's intake of energy, protein, and amino acid (Wing and Brown 1979:29). The main components of wood ash are calcium and phosphorus (Gilbert and Mielke 1985:Table 7.2) but its importance to a corn based diet is best summed up as follows:

> "In many cultures, one of the most important aspects of corn consumption was alkali processing of dried grain; dried corn was boiled in water with lime or wood ash (Parker 1968; Weatherwax 1954; Will and Hyde 1917, Wilson 1917). This process removes the pericarp and improves flavor and nutritional quality. Pellagra, caused by niacin deficiency, is a common disease in many parts of the world in which people consume large amounts of corn, but is virtually never seen in native American cultures that employ alkali processing". and " Corn contains bound niacin and has an unfavorable isoleucine to leucine ratio. Alkali cooking increases bioavailability of niacin, improves the isoleucine and leucine ratio, and reduces aflatoxin concentration (Serna-Saldivar et al.1990)". Further, "Many North American cultures used steeped wood ashes (Lye) as their alkali sources (Parker 1969; Will and Hyde 1917, Wilson 1917). Wood ash processing has the same nutritional benefits as lime processing except for the tremendous increase in calcium;

> the product is called hominy, which could be considered a vegetable. After processing, hominy was consumed directly, boiled alone, or mixed with other vegetables and/or fat, and fried or baked." (Tracy 1999:819).

There are many references to the use of wood ash in cooking among the Iroquoian people (e.g. JR XV:168; Parker 1910: 73; Tooker 1967:68) whether as a direct addition or the cooking of foods over and/or under layers of ash.. It should be added that niacin is absent in squash but there is a small quantity in beans although how much of this was available to the human digestive system is unknown to me.

A major study of plant use among the Huron was carried out by Stephen Monckton (1992) and involved four contact period villages and a Jesuit mission site. Both plant macro fossils, recovered through flotation, and pollen from cores taken from locales adjacent to the sites indicated the dominant position of maple, followed by beech and ash, as firewood. Pollen studies revealed a decrease in the foregoing hardwood species and an increase in grasses followed by species like pine and birch occupying the abandoned corn fields. An admittedly speculative attempt was made to reconstruct Huron plant food intake suggesting corn represented less than 58% and wild plants, mainly berries, constituted 24% of plant food ingestion. Despite a cautionary note (Ibid:83-84), such reconstructions are very questionable. The general observation, however, that wild plant foods were important in the diet is undoubtedly correct. Attempts at diet reconstruction are always fraught with a high potential for error given all of the immeasurable variables involved. Preservation procedures, such as parching corn, would have favoured accidental carbonisation unlike the treatment of the other cultigens such as squash and beans which were far less likely to be accidentally burned and thus preserved. Underestimation of the seasonal importance of foods like greens and tubers is virtually a certainty as such foods simply would have been dissolved in the stew pot leaving no archaeological evidence. Processed foods, both meat and plant, would defy identification. Such variables place calculations of diet in the realm of "just-so-stories". The majority of greens, barks, roots, and fungi recorded to have been consumed (Waugh 1916:117-123) would have left no record. In most instances plant materials must be accidentally charred in the first place to survive the passage of time. Such uncontrollable variables of attentive versus less attentive cooks and food processors undoubtedly explain the wide fluctuations in percentages of cultigens, greens/grains, and fleshy fruits from the different site contexts of the four early 17th century Huron villages studied (Monckton 1992:Table 3.3). The same archaeobotantist applied similar assumptions regarding the role of plants in the diet of the 14th century population of the Meyers Road site (Williamson et al. 1998:109-132) with similar erratic results stemming from attempts to quantify the unquantifiable and the inability to qualify the invisible. Once again, the erratic histogram distributions of the relative frequencies of cultigens, fleshy fruits, greens/grains, etc. (Ibid:Fig.4.1-

4.4) only serve to emphasize both the accidental nature of plant preservation compounded by poor sample sizes. The foregoing comments are not intended to negate the important contribution of archaeobotanical studies but simply to suggest that efforts to achieve an unattainable level of precision are fruitless (pun intended). While the Meyers Road site report identified an unusual range of fleshy fruits being exploited relative to nuts and greens/grains the latter have a reduced chance of being accidentally preserved and the nuts could well have been de-shelled at the harvest site. Striking comparative differences between sites also highlights the above cautionary notes regarding diet qualification and quantification. At the late 15th century Huron Baumann site (Stopp 1985), for example, the generally ubiquitous fleshy fruits, like raspberry, were absent but wild plum (*Prunus nigra*) was relatively common. Undoubtedly the occupants of the Baumann site consumed fleshy fruits but the variables of archaeological sampling and accidental charring processes have obscured the probability. Such limitations to interpretation were considered in the archaeobotanical study of the Keffer site (D. Wright 1991).

As with the foregoing attempts to be overly precise regarding the archaeological evidence pertaining to the consumption of plant foods some researchers have attempted to calculate meat weight from sites in order to acquire insights into what animal species were being consumed and in what quantities. Such attempts are based on what is here regarded as the erroneous assumption that discarded food bones from sites equal an approximation of the absolute numbers and kinds of animals consumed at a site (Stewart and Stahl 1977). As with plants, this assumption ignores two critical factors; namely highly processed winter foods and the varieties of foods, both plant and animal, which will leave no archaeological record of their presence much less their relative importance. While such limiting factors are frequently identified (Stewart 1999) their potential impact on the accuracy of efforts to quantify and qualify actual past diets is, for all intents and purposes, ignored in the quest of an admittedly laudable but unfortunately unattainable goal. There is no question, however, that both archaeofaunal and archaeobotanical studies are increasing in sophistication as both areas of specialization attempt to cope with the multiple variables effecting their respective data bases. For example, there is an increasing effort to identify the role of taphonomic processes, such as scavenging by dogs and other animals and food refuse discard and food processing practices. At a 13th century Uren stage site in Huronia, for example, the dominance of sturgeon and perch among the fish remains suggested a spring, river/lake fishery with processing at the capture sites as judged by the low ratio of cranial remains relative to vertebrae. In contrast, at the late 16th century Molson site in the same area a fall fishery was most important with only minor evidence of a spring fishery (Needs-Howarth 1999).

Consideration of plant use was initially examined in this section on **Subsistence** as plants were of paramount importance to the Ontario Iroquois. Animals, however, were also of importance, not just for their protein and other nutritional benefits but also for their hides, antler, bones, feathers, sinew, and other products. Fish were obviously of considerable importance, both fresh, smoked and dried for winter consumption. The majority of the fish species recovered from Iroquoian sites in Ontario pertain to those species from shallow, warm waters and to spring spawning runs although, as has been noted, there were exceptions. There is relatively little evidence of a fall fishery for species like lake trout (*Salvelinus namaycush*) or lake whitefish (*Coregonus clupeaformis*). The lengthy sequence of villages sites in the Niagara Escarpment area, situated only 10 to 15 km from the northwestern coast of Lake Ontario, lacked such evidence. Neither is there evidence of winter fishing through the ice for ling (*Lota lota*), a freshwater codfish (Finlayson 1998:379-380). Similarly, the 15th century Parsons site in Toronto lacked evidence of a fall fishery (Thomas 1998). The absence of certain species could be due to the processing methods or to the consuming of the entire fish including bones, such as the cisco, a lake herring (*Coregonus artedi*). There are exceptions to this general rule, however, like the Keffer site north of Toronto which produced a high percentage of whitefish remains represented mainly by decapitated individuals indicative of processing at the capture site (Stewart 1991:12-13). While the majority of late Neutral sites west of the Niagara Escarpment produce sparse evidence of a large lake fishery, an exception occurs at the Cabin site of Bradley Avenue in London which contained considerable evidence of a lake or, in this instance, a large river fishery in the form of whitefish (Lennox 1995:119). More typical than the Keffer site is the 14th century Wiacek site in Huronia (Lennox et al. 1986). Fish dominated the faunal sample by weight at 70% of the total with perch (*Percidae*) and sucker (*Castostomidae*) being most common. There was some limited evidence of a fall fishery and even winter fishing through the ice for ling, indicative of a familiarity with quite different fish capturing methods. Again, a scarcity of fish head bones suggested that fish were being processed at the capture sites. Nets and various stationary traps associated with funnelling weirs were likely the most important means of capturing fish although the Recollect missionary Theodat-Sagard (Wrong 1939:189) recorded that many fish were found with composite wood/bone fishhooks in their stomachs. Certainly the elaborate fish weirs at the Narrows between Lake Simcoe and Lake Couchiching, commented upon by Samuel de Champlain early in the 17th century (Biggar 1929:56-57), attest to the capabilities of the Huron to construct elaborate trapping structures in order to catch fish (Johnston and Cassavoy 1978) although the technology had a much earlier Archaic authorship. While both men and women would have fished it would appear that the men were mainly involved in large, open water fishing on Lake Huron. The evidence from the Dougall site at the above mentioned Narrows (Wright 1972) suggested that at this particular weir fishing site women, accompanied by their children, were the main participants.

Understandably, the nature of the faunal remains from sites in various regions of Southern Ontario differ. A comparison of six late Neutral villages with five Tionnontaté sites revealed interesting regional differences (Prevec and Noble 1983:Table 4). Deer, for example, were dominant in Neutralia while beaver dominated in Petunia. Dog was common in both regions but particularly so on the more northerly sites, as was also the case with black bear and woodchuck. Conversely, both raccoon and grey squirrel were more common in Neutralia. Another study of faunal remains from twenty-seven Neutral sites suggested an increasing reliance on mammals, like deer and woodchuck, leading to the speculation that the reduction of frost free days during the Little Ice Age, beginning around AD 1450, forced a shift to an increased reliance on meat (Campbell and Campbell 1989). Alternatively, the foregoing changes in the faunal records through time could have been due to population increases whereby a reduction in the numbers of the most desirable species was supplemented with smaller game except for deer which would have benefited from the more open landscape created by horticulture. Such an explanation is more likely for the changes in the faunal site samples noted from Neutralia; particularly given that the less favourably endowed game areas of Huronia-Petunia do not reveal a similar change in the faunal samples through time. There is also evidence for an increase in the hunting of passenger pigeons (*Ectopistes migratorius*) through time in Neutralia (Prevec and Noble 1983:Table 2), particularly at the large sites. Such evidence may not only relate to the acquisition of feathers and protein but also to an increasing need for crop protection from the once enormous flocks of passenger pigeons. It can be assumed that everywhere traps, such as snares and deadfalls (Novak 1987), were used to capture both small and large game.

The abundance and age ranges of deer from the 17th century Neutral Walker site indicated the use of deer pounds and, as most skeletal elements are represented, that the entire animals were being brought back to the village (M. Wright 1981:123) further suggesting the village was in close proximity to the deer pound. Another contact Neutral site, for example, was situated only 1.6 km from a major swamp which is still an important deer yarding area (Lennox 1981). While there is evidence that deer were most often processed away from the village there is also evidence that low yield portions of the animals were sometimes brought back to the village for purposes other than food, such as skulls for their brains used in hide tanning and distal limbs for the cannon bone used in the manufacture of tools (Thomas 1998:138). The only current compelling candidate for an ancient deer pound site is the AD 1000 Ireland II site in the Niagara Escarpment area. This pound occurred in close proximity to contemporary village sites and consisted of a 0.25 ha trianguloid structure of single rows of posts open at one end and situated on a hillock. Immediately outside of the lines of posts and directly *adjacent* to the pound were a number of 2 m long pits, possibly concealment pits for hunters with lances. The topography would have assisted in funnelling animals into the southern opening of the pound and the pound was so oriented to the prevailing wind that the deer could not use their keen sense of smell to detect danger. Archaeobotanical analysis indicate that the pound area was burned-off on a number of occasions (D. Wright n.d.). In many respects the Ireland II pound site resembles Samuel de Champlain's description of a Huron deer pound hunt which he participated in (Biggar 1929:82-85) and where tree snares and hunters on the periphery of pound are illustrated in an admittedly schematic wood-cut illustration. Given the dominant position of deer in Neutral subsistence it has even been proposed that the Neutral actually 'tended' or 'managed' deer herds (Noble and Crerar 1993) although this speculation has not stood-up well to critical evaluation (Stewart and Finlayson 2000). For example, the increasing human populations would require greatly expanded forest clearings for corn fields which would have, in turn, favoured an increase in deer populations that prefer an open rather than a closed forest habitat.

Bone ranges by weight and animal class from the twelve longhouses of the mid-14th century Nodwell site were as follows: 80-90% mammal; 5-20% fish; 0.5-3% bird; and less than 0.5% reptile and amphibian (Stewart 1974:109). Exceptions to the foregoing were House 5 and House 11 where fish represented half of the faunal sample. House 5, however, was a temporary, warm weather shelter for the village construction crews and was eventually dismantled to make room for permanent houses. As a rule the remains from the majority of the houses were similar. Little sign of butchering was apparent suggesting meat was probably being expertly disjointed and then boiled. On the assumption that wolf/dog remains at the site actually pertain to dog then dog remains were present in virtually all of the houses and were particularly abundant in House 9 and House 10. Of interest is the fact that House 10 was the largest, albeit not the longest, house in the village with an exceptional width of 8.2 m and bunklines 0.3 m wider than the standard 1.5 m widths for all of the other houses. The house is interpreted as a chief's house requiring greater floor space and bench room to accommodate ceremonial gatherings. Abundant evidence of dog feasting could be anticipated from a chief's house. There were two recorded instances of perforations in dog skulls that likely represent killing blows (Ibid:114). In general, dog remains are represented by adults and not infrequently exhibit butchering marks. A suggestion that an increase in the presence of dog bones in late Huron sites was due to the men hunting beaver for the European trade instead of deer (Ramsden 1990:380) is not convincing and far more likely relates to an increase in ceremonial activities requiring dog sacrifice and feasting in an attempt to counteract disruptions caused by European influences and disease. In fact, the high instance of beaver in many faunal samples is undoubtedly inflated due to the fact that beaver incisors were an important carving tool and would have been selectively curated and returned to the village from distant kill sites. At the late 16th century Kirche site on the upper Trent River, for example, beaver remains were mainly represented by incisors while other species tended to be represented by all parts of the body except for a low representation of the pelvic-pectoral girdle (C.Ramsden 1989:Table 26). There was also an abundance of molluscs at this particular site; an uncommon feature on Huron villages. As noted above, faunal analysts frequently have an understandable difficulty in distinguishing between dogs and wolves. In Iroquoian mythology when the Creator released the animals he shot each in the hind leg with an arrow to slow them up in order for man to capture them. He missed the wolf. This very likely reflects the difficulty of capturing wolves with the extant technology and, therefore, the vast majority of the dog/wolf identifications from sites most likely pertain to dogs.

As has been observed a number of times, "...identifying the range of plants and animals that were consumed is not the same as estimating the contribution of these foods to the diet. The latter is a much more difficult endeavour" (Milner and Katzenberg 1999:209). Stable carbon and nitrogen isotope ratios are presently one of the most effective methods of evaluating the proportional intake of certain foods. Isotope studies have revealed that the increasing reliance upon maize was spotty across eastern North America and did not become common in most areas until around AD 1000. Stable isotope studies, however, are not without their technical problems (Schwarcz et al. 1985). The increasing adoption of horticulture and the requisite sedentary life style appears to have led to some losses in nutrition (Ibid:211) although other cultural and environmental factors could also have led to this deterioration in general health. Health, for example, would undoubtedly have been effected by the changing settlement patterns leading to larger concentrations of people which would favour the spread of communicable diseases like tuberculosis. The road to full blown horticulture was a long and regionally variable one with much local complexity which would tend to confound any uniform pattern. While changes in methods of plant production, storage, and the effective organization of labour, permitted population increase it was an increase punctuated by drought and pest infestations leading to periodic famines. Environmental conditions affecting site locations are beginning to be addressed as well as potential political and cultural factors influencing the choice of site locations. A study of soil and climatic conditions in Southern Ontario, for example, concluded that horticultural villages correlate with favourable light textured soils, good drainage, rolling relief, and 90+ frost free growing days at least for nine out of ten years (Campbell and Campbell 1992).

Settlement patterns:

No other archaeologically identifiable aspect of culture was changed as dramatically by the adoption of horticulture as settlement patterns. The flimsy nuclear family dwellings of the preceding, highly mobile, hunters and gatherers were transformed into multi-family longhouses clustered in villages frequently surrounded by defensive works. Prior to the adoption of horticulture there are less than a dozen dwellings identified in the archaeological record of Southern Ontario (Wright 1995;1999). In terms of physical structures the longhouse is the most defining feature of Iroquoian settlement innovations. The combination of archaeological floor plans, early 17th century European descriptions, and certain practical considerations regarding building materials, have permitted recent reconstructions of these impressive structures (Wright 1995a). It is estimated that it took at least 300 years to transform seasonal migratory hunters and gatherers into committed sedentary horticulturists (Noble 1975:37). Once the commitment was made, however, the process of change was rapid. Beginning with the 0.4 ha or one acre 9th century Miller village site by the early 17th century Huron and Neutral 4 to 5 ha or ca.10 to 12 acre towns were in place. Until recently most excavations of Ontario Iroquois sites have tended to focus on the large village sites. Small hamlets, cabin sites, hunting camps, and special purpose sites are, however, increasingly coming under examination. Broad evaluations of settlement patterns, considering all aspects of how people distributed themselves across the land, have been realized thanks to large mitigation projects required by legislation (Finlayson et al 1977; Lennox 1995), or, more rarely, by long range regional research projects (Finlayson 1998).

PICKERING

The earliest evidence of a sedentary, horticulturally based way of life in Ontario Iroquois culture appears in the Pickering complex around AD 800. Technology, mortuary practices, and physical anthropology all indicate that the Pickering complex arose from the hunting and gathering communities of the Point Peninsula complex centred mainly in the naturally rich environment of the Rice Lake area (Wright 1984; 1999:Chapter 23). Pickering people continued to exploit the seasonal fishing and gathering sites of their ancestors as evident in the archaeological deposits of the abundant stratified sites on Rice Lake and environs (Ritchie 1949). They also continued to bury their dead at the sacred sites of their ancestors, such as Serpent Mounds (Johnston:1968a). Pickering villages in the immediate area of Rice Lake, however, are rare. The Richardson site on the Trent River drainage southeast of Rice Lake, estimated to date to AD 900 , was palisaded with houses and middens although post mould demarcation was poor and did not permit precise floor plans of the dwellings (Pearce 1978). Early Pickering villages, to date, are found as far to the east as far as the mouth of the Trent River and west into the Burlington region at the western end of Lake Ontario. The western development appears to be independent of the Rice Lake sequence (Finlayson 1998) and, indeed, Pickering sites along the northshore of Lake Ontario to the south of Rice Lake would appear to represent another regional cultural development (MacDonald and Williamson 1995). Other such regional cultural expressions of the Pickering complex will undoubtedly be identified in the future.

Early Pickering longhouses tend to be short by later standards with most dwellings ranging between 11 and 23 m in length (Finlayson 1998:Vol.III). At the Miller site most of the houses are just under 18 m in length (Kenyon 1968:Fig.4). By late Pickering times houses increased to 50 m in length but 30 m lengths are more common (Finlayson 1998:Vol.III; Wright and Anderson 1969). House widths, in contrast to lengths, are consistently in the range of 7 m. Interior house features consist of hearth floors down a central corridor, pits of various forms, bunk lines demarcated by large posts parallelling both sides of the house, and end cubicles, all typical later Iroquoian house floor features. Individual and multiple flexed and bundle burials occur within or adjacent to the village and sometimes in house floors. Houses tend to be oriented in two different cardinal directions. Speculatively, the duality of house cluster orientations may be indicative of clan related house lineages. The earliest evidence of possible sweat lodges, both inside and outside of houses, appears in late Pickering times (Finlayson 1998:III.3.29; Wright and Anderson 1969:Fig.3). These large pit structures possess an excavated entranceway at one edge and, although subsequently used for both refuse disposal and burials, appear to have been initially constructed for either ceremonial sweating or possibly squash storage. Squash storage is rarely considered by archaeologists and yet squash was a very important cultigen and would have been the principle food during certain seasons (Waugh 1973:112). Squash were not only stored in pits but were dried over the fire for later consumption. Squash plants can yield great quantities of fruit and large pits would be required where the vegetables would keep for as long as five months. Perhaps some of the so-called sweat lodge pits with their excavated entrance ways penetrating into the longhouse were convenient squash storage pits. It is also worth noting that squash was an important ceremonial feast food (JR LVII:251).

The Miller site, situated on a tributary of a creek 5 km from Lake Ontario, was almost completely excavated (Kenyon 1968). Another five Pickering villages have been recently discovered in the same general area (Dr. William D. Finlayson, London Museum of Archaeology: personal communication). The single palisade of the Miller site could have enclosed 10 to 12 longhouses, 7 of which were demarcated by the excavations (Ibid:Fig.4). Pits and burials occurred both inside and outside of houses with two of the latter occurring immediately outside of the palisade. Only a limited number of the interior house features were recorded in the original published report but additional house interior feature information is now available in subsequent reports (Kapches 1990:Fig.4). Only one primary or in-flesh burial was recorded, the remainder being represented by small ossuaries composed of a number of bundle burials; another typical later Ontario Iroquoian trait. Abundant carbonised corn as well as a typical Iroquoian type of technology were also recovered. In every respect, the Miller site presages later Ontario Iroquoian villages.

UREN-MIDDLEPORT

Cultural continuity from Pickering into Middle Ontario Iroquois, beginning around the end of the 13th century, is marked by the early and late substages of Uren and Middleport. The continuity is so smooth that if the Pickering conquest of the Glen Meyer complex to the west of the Niagara Escarpment had not taken place at this time it is doubtful that the Uren substage would ever have been differentiated from the Pickering complex in the original synthesis (Wright 1966). While there is clear cultural continuity from Uren into Middleport it is likely that the Middleport substage would have been identified as the sole expression of the Middle Ontario Iroquois stage given that this was the time of major Ontario Iroquois cultural fluorescence. Just as regional cultural variability is apparent in Pickering, such as in the area east of Toronto compared to contemporary sites at the west end of Lake Ontario, regional variability can be detected in technological aspects of both Uren sites and their Middleport descendants (J. Wright 1999).

Uren villages, situated on sand plains, are generally over one hectare in size and two or more villages are usually situated in close proximity to one another; normally a defensive measure. Village defence, however, appears to have been quite variable, presumably relative to the local political situation. Some sites are palisaded and situated in natural defensible locales while others are not. For example, in the Niagara Escarpment area the late Pickering complex villages are palisaded and situated in defensive locales whereas the subsequent Uren villages are neither palisaded nor situated in naturally defensive locales. Longhouses were also more widely spaced than those of their predecessors. By Uren times the conflict with the Glen Meyer complex to the west was over and with it the necessity for major defensive considerations in the Niagara Escarpment area (Finlayson 1998). Uren villages not only appear suddenly across much of Southern Ontario west of the Niagara Escarpment (Wright 1992) but also spread into adjacent western New York State to give rise to Middleport descendants (White 1961).What are likely seasonal hamlet or cabin sites have been recorded. The Willcock site, for example, consisted of a single 23 by 7 m longhouse associated with three middens (Dodd et al. 1990:348) while the transitional Pickering/Uren Willcox Lake site, situated on a kettle lake northwest of contemporary villages (Austin 1994), would appear to have been a seasonal occupation. There is also a tendency for the parallel alignments of longhouses within the village to become more pronounced (Dodd et al. 1990). Fewer instances of overlapping houses occur, suggesting a more permanent form of year round residence. On the other hand, overlapping longhouses do not always indicate the reoccupation of site areas after a passage of time but could instead relate to the rebuilding of a village destroyed by fire. In 1635, for example, during drought conditions in Huronia, three villages were destroyed by fire (JR X:35). There is also the possibility that the relatively common phenomenon on early Ontario Iroquois villages with overlapping longhouses represents a retention of an earlier pattern of returning to previous settlements.

It is becoming increasingly clear that Huronia, between Georgian Bay on Lake Huron and Lake Simcoe, was colonized by a mid-13th century migration out of the south (Sutton 1995; 1999). Until recently only a singe Uren stage village was known in the area (Ridley 1958) but archaeological mitigation work, required by suburban expansion south of Kempenfeldt Bay on Lake Simcoe (O.A.S. 2000), has revealed a number of Uren villages which would have been, in part, ancestral to the subsequent numerous Middleport villages. Richard E. Sutton has recently provided an excellent consideration of the possible range of factors involved in the northward migration of the population who constructed the Barrie village site. As a pioneer village the Barrie site, like a later pioneer village, the Nodwell site, was characterized by an exceptionally high frequency of woodchuck (*Marmota monax*) remains possibly suggesting that the sandy soils which attracted the early horticulturists also harboured a large resident population of woodchucks which, of course, would have constituted a threat to the crops. As woodchuck or groundhogs are easily snared it is not particularly surprising to encounter an abundance of their remains on pioneer villages as their capture would both provide protein and removed a potential predator from the corn fields. While Sutton (1999) notes the presence of even earlier Pickering fishing campsites in the Lake Simcoe region it would be hazardous to assume that the pot sherds ethnically identify Iroquoian people, an assumption that others have also been guilty of (Wright 1972); particularly as nearby Algonquian people on Lake Nipissing shared in the same pottery tradition from at least AD 1000 on (Ridley 1954). It quite possible that the region was seasonally exploited prior to the establishment of the southern horticultural villages by either Iroquoians from the south or Algonquians from the north or both.

Village size increased dramatically during the Middleport substage with villages frequently ranging from 1.5 and 1.7 ha up to as much as 3.2 ha (Dodd et al.1990:350). As with Uren sites, houses tend to be aligned in parallel clustered groupings of two or more houses. An attempt to equate such alignments with social units, like clans, on the basis of pottery motifs at the Nodwell site was not successful (Wright 1974; but see Trigger et al. 1980). As with Uren sites, Middleport sites may or may not be palisaded or situated in natural defensible locales. The 2.2 ha palisaded Middleport site itself was situated directly on the bank of the Grand River (Wintemberg 1948). Middleport longhouses achieve some of the greatest lengths recorded for the Ontario Iroquois. At the Moyer site (Wagner et al. 1973) one house measured 93.3 m in length. The Moyer site houses were also exceptional in another respect. All of the ten recorded houses were 8 m or more in width or 1 m wider than the norm. In addition to the villages, hamlets, camps, and cabin sites have been identified. A study of the cultural debris from a Rife site longhouse and an adjacent midden clearly associated house floor sweepings with the makeup of the midden deposit (Finlayson 1998:Fig.III.3.45 to III.3.50). Three unusual house floor configurations at the completely excavated mid-14th century Nodwell site were the identification of a temporary work shed, House 5, which was subsequently torn-down to make room for two permanent houses (Wright 1974:34-37), another house that was located outside of the defences but aligned perpendicular to and connected to the southern entrance into the village (Ibid:Fig.3), and a probable visitors dwelling on the western edge of the village connected to the stockade (Ibid:117). As the Nodwell site was situated too far west or north from known contemporary Middleport villages in Huronia and in the Grand River area for construction workers to commute a temporary living quarter was needed in the form of House 5. The house measured 39 by 8.2 m, had a paucity of interior pit features and hearths, and limited evidence of the large interior posts which not only supported the structure but also provided the attachment points for the interior horizontal pole supporting the sleeping platforms. Faunal remains from this house also deviated from the other houses (Stewart 1974). The probable visitor's dwelling measured 7.6 by 6.1 m and was situated immediately adjacent to the western entrance into the village with a long, exterior screening row of posts at the eastern end of the dwelling (Ibid:Fig.2 & 11). Visitors to villages, who could possibly be enemy spies, real or imagined, were not permitted to wander freely in a village but were assigned to a special dwelling. This was undoubtedly an attempt to stop strangers from scrutinizing the interior defensive system of the village (see Figs. 123 and 124). Small, seasonal fish camps, generally located at the mouths of rivers and creeks along the Lake Huron coast, ranged as far south as 23 km to the south and at least 10 km to the north of the Nodwell village and would reflect seasonal camps from the main village (J.V. Wright: field notes). Some proportion of these deposits, culturally identified on the basis of pottery, could well be Algonquian as well as Iroquoian given that both groups shared the same pottery tradition.

Attempts to estimate the population size of past communities are, at the best, speculative exercises. It is possible, however, to suggest that by Middleport times there was a significant increase in the number of villages; probably a result of both an ongoing process of consolidation of smaller, more scattered communities, as well as accelerated natural population growth based upon the increasingly stable food supply provided by plant cultigens. Using a recent listing of Middleport sites (Dodd et al. 1990:Table 10.4) it is possible to provide a rough approximation of populations at this time. If one accepts the calculation of 250 people per acre of village as determined from completely excavated villages where the number of families within a longhouse can be accurately estimated by central corridor hearth counts (Wright 1992a) and further accepts the recent estimate of approximately a 90 year time span for the Middleport stage of development (Finlayson 1998; see Table 25), then using the aforementioned Table 10.4 in Dodd et al.1990 it is possible to calculate a total of 82.8 ha of Middleport classified villages if the sites listed as villages and hamlets, for which no size estimate is given, are arbitrarily assigned an average 1.0 ha figure. The resulting 82.8 ha, or 204.6 acres, times the 250 people per acre of village equals 51,150 people. If it is further assumed that three village relocations occurred within the 90 year period then the number drops to approximately 17,030 people. On the further assumption that only half of the Middleport villages which once existed have survived or been recorded by archaeologists, then the number jumps to 34,060. There are many 'and's, if's, and but's in the preceding scenario but its central purpose is not to attempt an impossibly precise mathematical projection of past population densities but rather to indicate that quite large numbers of people were involved even at this early stage in the Ontario Iroquois tradition. This adds further credence to the early 17th century French population estimates of groups like the Huron of around 30,000 (Heidenreich 1978:Table 1). Contrary to the population measurement criteria used above estimates for population increase in the upper Trent River Valley, between AD 1450 and 1580, ranged from an early low figure of 90 people per acre up to a late figure of 213 people per acre (Saunders et al. 1992:Table 1). Only the late figure approximates estimates based on total village excavations where central hearth floors could be counted and thus provide an accurate estimate of the number of families living in any longhouse. These figures were 233 people per acre at the Nodwell site, 217 people per acre at the Draper site, and 286 people per acre at the Ball site (Wright 1992a:30).

Some sites, like the Uren to Middleport transitional Elliot site east of Toronto (Donaldson 1965), with its two middens separated by 180 m of unoccupied land, numerous juvenile vessels and fired clay lumps, and abundant fish remains, was more likely a seasonal fishing camp than a year round occupied village. Similarly, the Myers Road site, overlooking the Grand River (MacDonald et al. 1998), possessed a number of unusual settlement pattern features suggestive of a seasonal fish camp rather than a year round occupied village. Indeed, the site was multi-component with both Glen Meyer and Middleport occupations, had overlapping house floors, and more than 30% of the 150 pit features occurred outside of the houses in contrast to the Nodwell site where less than 5% of the 1,492 pits were so located. Further, only four of the ten longhouses were fully enclosed by the palisade. An abundance of pickerel/sauger (*Stizostedion sp.*) bones are indicative of a spring fishery. In addition, large outside activity areas, logically associated with warm weather chores and socializing, were identified (Ibid: Fig.2.13). It is possible, of course, that the site functioned through time as both a seasonal fishing camp and as a small permanent hamlet. Villages from Middleport times onward situated on the banks of major rivers were apparently not overly concerned with attack from the either the headwaters of the river or from the direction of Lake Erie. On the Thames River in London the Middleport Norton site, for example, was only surrounded by a single palisade (Cooper and Robertson 1993) in contrast to the heavily defended descendant site of Lawson in the same City a hundred years later (Wintemberg 1939). Of course, the Middleport epoch was the period of expansion of the Ontario Iroquois tradition and such limited concern with defence may relate to an expanding and confident population who had no significant enemies to worry about.

In most areas, including adjacent New York State, Middleport sites were preceded by a much smaller number of Uren villages. Similarly, in Huronia proper the currently limited Uren period occupation cannot account for the number of subsequent Middleport sites and additional migration from the south, involving 60 km, represents the most reasonable explanation for the sudden population increase during Middleport times (Sutton 1995:Fig.2). As was the case with the St.Lawrence Iroquois of eastern Ontario, the late 13th century occupation of Southern Ontario west of the Niagara Escarpment and adjacent New York State involved substantial population migrations. Such population movements were probably motivated by political considerations. More common than the occasional distant migrations were villages to move to new quarters within commuting range of the work parties constructing the new village and preparing fields. Life would proceed as usual in the older village until it was time for the entire community to move into the new quarters (Nixon 1986:Fig.1). Some exceptions to the preceding are particularly clear. The Nodwell site on the coast of Lake Huron was situated approximately 130 km west of the nearest cluster of contemporary Middleport villages in Huronia or 170 km from contemporary villages in the Grand River Valley to the southeast. A recent comparative study has indicated close correspondences in pottery motifs between the Nodwell and Middleport site on the Grand River (J. Wright 1999). From the Middleport site water transport to the northeast via the Grand River could connect with the headwaters of the Saugeen River which empties into Lake Huron a short distance north of the Nodwell site. As the Nodwell site is situated in one of the most intensively archaeologically surveyed areas of Southern Ontario it is unlikely that other villages will eventually be discovered. In this instance, it is speculated that the Nodwell site's isolated location was dictated by a desire of its occupants to place themselves in a favourable trading location relative to the Algonquian bands of Georgian Bay; a suggestion supported by the comparatively large number of native copper implements from the site (Wright 1974:303-305).

While village relocations are generally attributed to soil and firewood depletion or political/social considerations, a number of interacting factors likely determined the decision to relocate. It has been argued that the impact of insect depredation of crops could lead to a village relocating (Starna et al. 1984). Although most frontier villages were heavily defended, at the 0.74 ha Wiacek site (Lennox et al. 1986), one of the early Middleport villages in Huronia (Sutton 1995), there was no evidence of palisades suggesting that potential enemies did not include the Algonquian bands immediately to the north. Indeed, even the initial Uren stage pioneer villages into the area appear to have been undefended (O.A.S. 2000). Again, a range of situational considerations could account for numerous variations in the underlying reasons for village relocations. Obviously, with such labour intensive consequences associated with village relocations such decisions would not have been taken lightly.

Communal burial pits or ossuaries, consisting of a number of bundle burials retrieved from the cemetery(ies) of a village or a number of affiliated villages for final burial, were

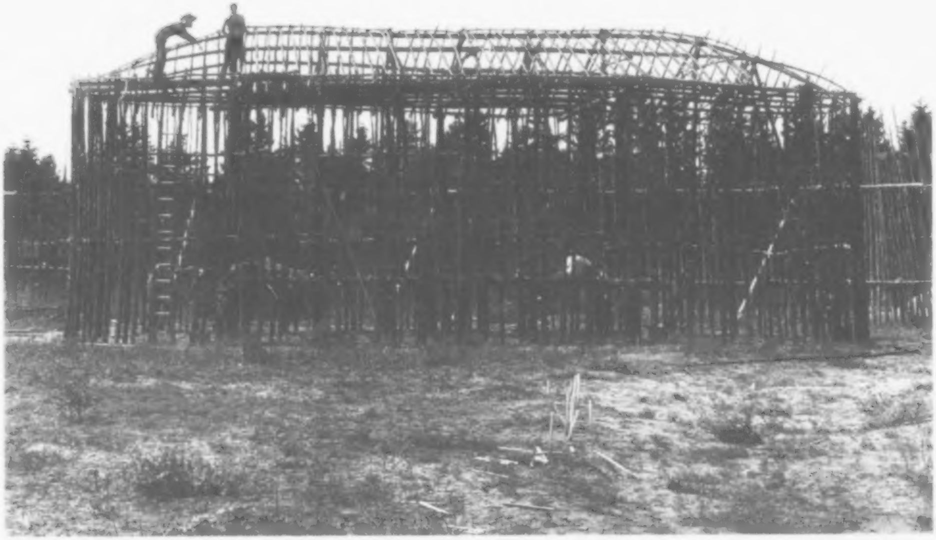


Figure 1

BLACK AND WHITE PLATE XLVII: THE THREE DIMENSIONAL RECONSTRUCTION OF A NODWELL SITE LONGHOUSE The exterior and interior views of a reconstructed longhouse framework at the Nodwell site provides some impression of both scale and living quarters arrangement. During the reconstruction the posts were actually fitted into the ancient post moulds. When this was done it became apparent that a number of the large interior posts not only constituted the structural strength of the dwelling but also acted as the attachment points for the inner edge of the horizontal bunklines running down both sides of the house. Figure 2 illustrates an end house cubicle used for storage as well as the bunklines in the interior of the house proper. The small, central stack of wood marks the location of one of the central corridor hearths which would have been shared by two families occupying living quarters on opposite sides of the dwelling. Workers on top of the structure in Figure 1 provide an impression of scale. Of course, the entire structure would have been sheathed in bark. For the types of information and reasoning used in such restorations see Wright (1995a) although alternative opinions regarding longhouse construction exist (Kapches 1990). (Reproduced from Wright 1974: Plate XIX, Figs.1 & 2)

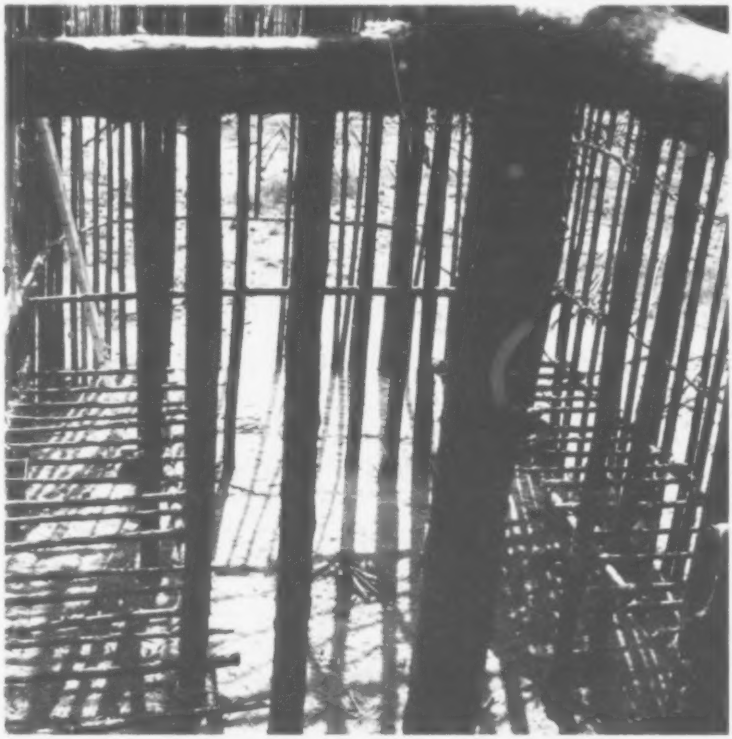
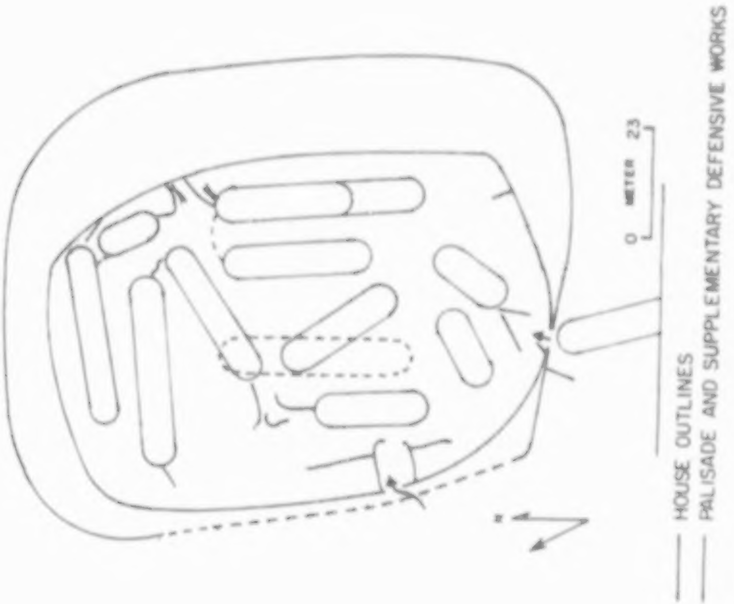


Figure 2

often located some distance from the village proper. The Robb site, to the north of Toronto, was 0.5 km from the Fairty Ossuary. This ossuary contained a minimum of 512 people (Anderson 1963:32). Other Middleport sites in the area, like New 2.4 km and Milroy 4.0 km to the east, respectively, could also have contributed their dead to the ossuary as well as the Sewell site 2.4 km to the southeast (Kapches n.d.:Fig.9). Similarly, the Nodwell cemetery and associated small ossuary was situated 2.5 km east of the village.

HURON-TIONNONTATÉ/NEUTRAL-ERIE

The two major regional descendants from the Middleport stage were the Huron-Tionnontaté and the Neutral-Erie situated on either side of the Niagara Escarpment. Considerable cultural variation exists within each of these large groupings of tribes. A further regional grouping of Huron-Tionnontaté tribes, the Northern Division, developed in place in Huronia-Petunia after their late 13th centuries migration into the region while another group of tribes, represented by the Southern Division, occupied the north shore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0 METER 23
HOUSE OUTLINES
PALISADE AND SUPPLEMENTARY DEFENSIVE WORKS

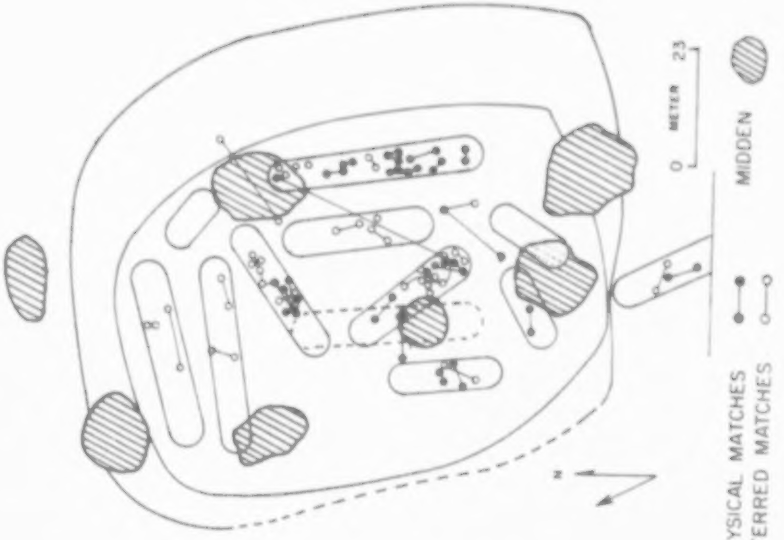

N
0 METER 23
PHYSICAL MATCHES
INFERRED MATCHES
MIDDEN

FIGURE 121: SPATIAL DISTRIBUTION OF HOUSES, MIDDENS, CO-JOINED ARTIFACT FRAGMENTS, AND INTERIOR DEFENSIVE WORKS AT THE NODWELL SITE The drawing to the left illustrates the relationship of the houses to the middens and the palisade as well as the distributions of fragments of artifacts either glued together or, on the basis of corresponding attributes, believed to pertain to the same pottery vessel or pipe. There was only minor evidence of the discarding of garbage down the steep western slope of the site. The longhouse outlined in dashes represents the original work shed used during the village construction. To the right the lines of posts extending from the ends of longhouses to join the interior palisade or other houses would have funnelled attacking warriors who had managed to breach the stockade walls into cul-du-sacs within the village proper. The western entrance into the village passed through a visitor's dwelling attached to the inner stockade and screened from the interior of the village proper. House 1, outside of the village but connected to the southern entrance to the village presented a major puzzle. During any attack on the village the firing of the House 1 would have been sufficient to breach the southern defences. It's unusual location could either be attributed to a dream requirement, fundamental to Iroquoian decisions as dreams were regarded as a direct message from God or to a sense of security despite the double stockades. (Drawings by Mr. David W. Laverie)

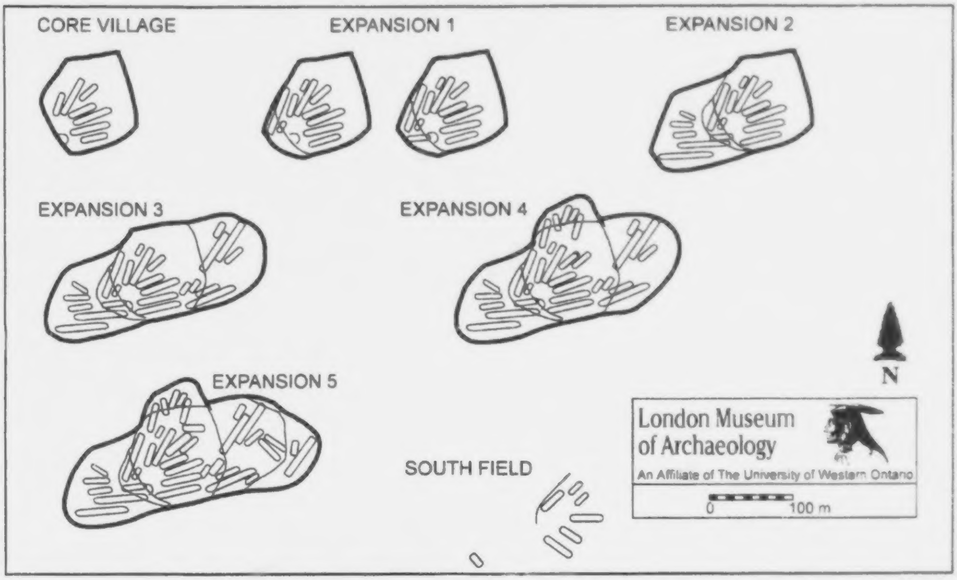
of Lake Ontario from Toronto eastward to the end of the Lake. In the lower Trent River Valley an in situ development beginning with Pickering lasted until the 16th century when the area was abandoned for the upper Trent River Valley (Sutton 1990). All of these people eventually settled in southern and eastern Huronia just prior to the end of the 16th century. At approximately the same time villages along the river drainages near Toronto began to advance northward, eventually to settle in Huronia except for the two tribes who would become the Tionnontaté immediately to the west of Huronia. Similarly, the tribes constituting the Neutral Confederacy mainly settled around the eastern end of Lake Ontario although some had originally developed in place in the London region with others penetrating nearly as far west as Lake St.Clair at the western end of Lake Erie. The western-most Neutral tribes and those of the London area contracted east of the Grand River about the same time as the Huron tribal location shifts. Some Neutral villages to the east of the Niagara River also removed themselves to the other side of the River. The Erie of adjacent New York State, at the juncture of Lake Ontario and Lake Erie, moved their villages southward. Possible reasons for these significant population shifts will be considered in the section on **Inferences on society** but the beginnings of the formation of the League of the Iroquois sometime around the mid-15th century would appear to represent the most parsimonious causal factor. For the western-most Neutral the eastward contraction was probably in response to ongoing hostilities with the Fire Nation of the Detroit area (Lennox and Fitzgerald 1990:437-438). Long distance population shifts determined by archaeology have also been documented by the French. In 1638 the Wenro of western New York, formerly under the protection of the Neutral

Confederacy, moved 390 km to join the Huron when the Neutral expelled them from the Confederacy leaving them exposed to attacks from the nearby Seneca (Tooker 1991:14). Although 17th century Wenro villages have not been identified in New York ((Dr. William Engelbrecht, Buffalo State University: personal communication) contact period sites in Huronia, like the Edward site, with significant frequencies of Seneca-Cayuga pottery types, have been speculated to represent the Wenro refugees (Ridley 1973). On the other hand, if Wenro pottery styles were similar to those of the Neutral then there would be some difficulty in distinguishing them from similar Huron pottery styles; particularly when earlier 16th century mergers of Huron and Neutral communities are apparent at sites like Seed-Barker on the Humber River north of Toronto. Over 40% of the pottery from the Seed-Barker site is more typical of the Neutral than the local Huron (MacNeish 1952:Fig.10) suggesting that a Neutral village had merged with a Huron community to form a large town. The more than 20% of Seneca style pottery from the Huron Orr Lake site, on the other hand, likely reflects a large incursion of Seneca women captives.

HURON-TIONNONTATÉ

Huron-Tionnontaté village site locations are quite variable, ranging from naturally defensible settings to lake shores, the bottoms of narrow valleys, the base of slopes and adjacent to cedar swamps. The application of statistical models to Ontario Iroquois site locations in relationship to village size suggests that sites decrease in frequency exponentially with distance away from water, allowing for factors like water type, spring or creek, and soil drainage characteristics. Site size also appears to be exponentially related to distance from water but is also influenced by other factors. Village distance from potable water is mainly around 50 m with the numbers of villages dropping off at distances of 50 to 150 m and sharply decreasing beyond these distances (Bellhouse et al. 1996:Figs.1 & 2). Arrangements of houses are also variable. At the late 16th century Benson site in the upper Trent River Valley one of the twenty-four longhouses was situated outside and parallel to the three to six rows of palisade (Ramsden 1990:Fig.11.13). Such an arrangement would certainly have provided any attacking force with a convenient bonfire with which to breach the defences. It would need to be demonstrated, however, that the external house was contemporary with the final village defences. Benson site longhouses were oriented in two different directions which may reflect an arrangement of clan lineages or some other social relationship. Associated with a large village like Benson were small hamlets and special purpose camps. Such outlying smaller villages and hamlets would have been abandoned when threatened by attack with the people fleeing to the large, heavily fortified towns. Such a defensive tactic would explain why the large frontier villages usually had space within the defences to accommodate refugees (Finlayson 1998:Fig1.1.12; Knight 1987; Ramsden 1990:Fig.11.14).

One of the most extensively excavated Huron sites is the early 16th century Draper site east of Toronto (Finlayson 1985). Passing through five successive village expansion stages and terminating in a 3.4 ha town of 35 longhouses with a small satellite hamlet of seven longhouses immediately to the south of the main village, the site is certainly one of the largest on record with an estimated population of 2,000. A single dwelling west of the village proper was probably a special purpose house, perhaps intended to house strangers. Two other possible visitor's houses were inside the town's multiple stockades but abutted to the defences, not unlike the situation recorded at the Nodwell site (Finlayson 1985:Fig.32). It has been estimated that 8,370 posts were required for the final defensive system alone and that a total of 15,710 posts were required to accommodate the multiple expansions of the defences. Middens were generally located at the ends of houses and were shared by two or more longhouses. Longhouse lengths had a bimodal distribution, falling into 14.5 to 44.1 m and 50.9 to 75.1 m groupings with the former being most common (Ibid:Fig.77). Village planning was evident from the defensive interconnecting of longhouse walls with the palisades and each other. An exceptionally wide house of 7.9 m, like at the Nodwell site, has been interpreted as a chief's house made more commodious in order to accommodate large gatherings. Circular clusters of small posts, 2 m in diameter, within the dwellings were interpreted as sweat lodges. Narrow house wall trenches were also identified indicating the burying of the sheathing bark to prevent ground drafts. Such trenches were probably a common feature but being only 20 to 40 cm deep have likely in most instances been destroyed by recent ploughing (Kapches 1980). A most unusual house at the Draper site possessed the partition and bench support "slash pits" typical of many Neutral longhouses and is indicative of Huron and Neutral relations, a probability also reflected in the large quantities of Onondaga chert from the Neutral area found at the site. In contrast to the heavily defended Draper site, understandable given its frontier location only 300 km to the west of hostile St.Lawrence Iroquois villages in eastern Ontario, the White site situated 2.5 km southwest of the Draper site not only lacked defences but most of the houses were located in the bottom a deep stream valley where the advantage of the high ground would have been in the hands of any attacking force. Presumably during an attack such a village would simply have been abandoned by its occupants who would flee to the Draper site. The population of the White site is estimated to have been nearly 500 (Finlayson et al. 1977:45). While it has been suggested that the White site may have been a seasonally occupied farming hamlet its size and the presence of both child and adult primary and secondary burials would suggest a year-round occupation. A more likely candidate for a seasonal farming hamlet in the area is the Robin Hood site (Williamson 1983). At this site there was abundant evidence of berry harvesting, suggesting May to October activities as did the faunal remains. There was limited evidence of either cultural debris or interior house features with the latter being randomly distributed rather than following the usual pattern of concentrating around the central hearths. Indeed, evidence of hearth floors was often


CORE VILLAGE
EXPANSION 1
EXPANSION 2
EXPANSION 3
EXPANSION 4
EXPANSION 5
SOUTH FIELD
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London Museum of Archaeology
An Affiliate of The University of Western Ontario
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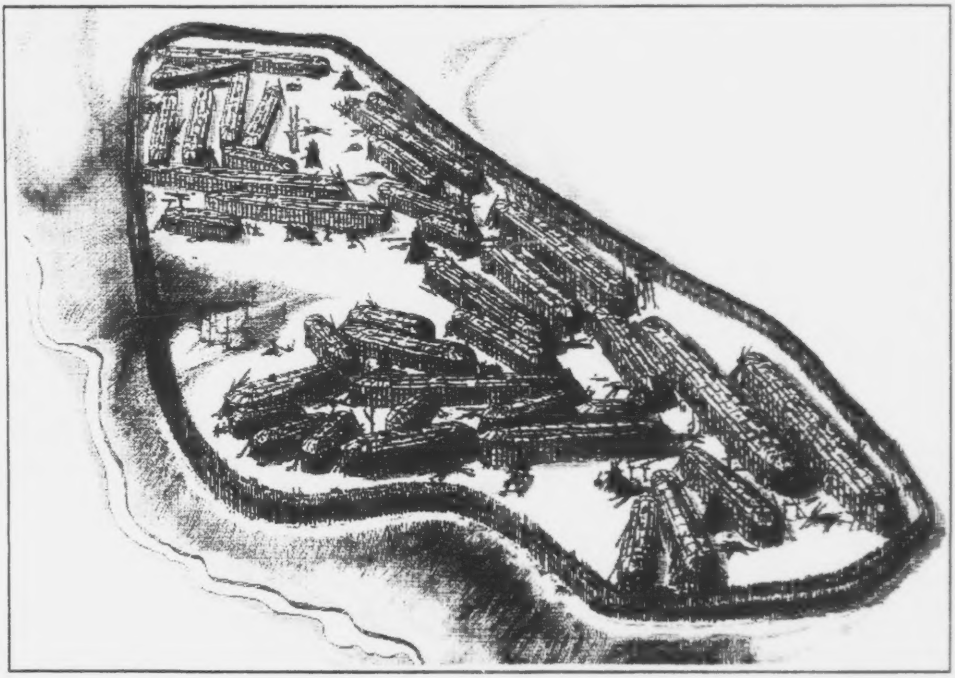
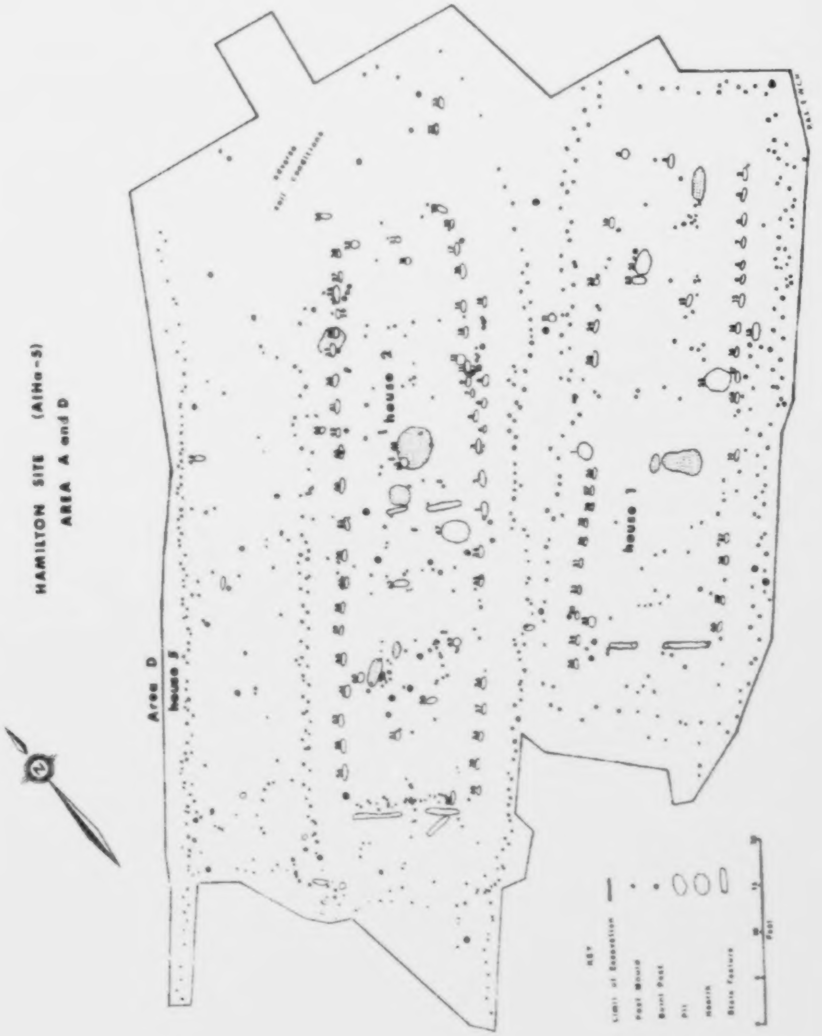


FIGURE 122: THE DRAPER SITE VILLAGE EXPANSIONS: The early 16th century Southern Division Draper site east of Toronto began as a 1.2 ha village which expanded five times to become a town of 3.4 ha containing 35 longhouses and an estimated population of 2,000 (Finlayson 1998a:219-221). One hundred and seventy metres to the south of the town was an undefended satellite community consisting of seven longhouses. This large town expanded by amalgamations involving a number of small villages. Most instances of small villages coming together to form large towns pertain to sites located on a frontier, such as the Draper (Finlayson 1985), Coulter (Ramsden 1990), and McKeown (Pendergast 1988) sites, and would have represented a defensive strategy. In the drawn reconstruction of the Draper site by Ivan Kocsis the scale of the dwellings can be appreciated by the fact that they would have been approximately 6 m in height. It is little wonder that early European observers were impressed with these large communal dwellings. (Reproduced with permission from Finlayson 1998:Figs.I.1.12 & 13).

lacking. Further, the fact that 60% of the site features were situated outside of the houses also supports a warm weather rather than year-round occupation. In addition, the widely spaced houses with open ends indicate a lack of concern with heating. No attention to defence was in evidence but the hamlet was located to the west of a series of major contemporary village sites which would have acted as buffers against attackers from the east. The Robin Hood site provides a particularly informative glimpse of a seasonal, limited occupation site of four longhouses. As will be seen, in contrast to the Neutral Lawson site, there were only two such outlying seasonal cabin sites discovered within the nearly 7,500 ha of expropriated land subjected to intensive archaeological survey for an airport in the Pickering area (Finlayson 1985:485).

Like the Draper site, the Coulter site in the upper Trent River Valley went through five major expansions beginning as a small village and ending up as a 3.3 ha town of an estimatd 36 to 46 longhouses surrounded by five rows of palisades (Damkjar 1990). Orientation of the longhouses is variable but tended to be northwest by southeast, adding some support for the hypothesis that houses were oriented to face into the prevailing wind (Norcliffe and Heidenreich 1974). Most site floor plans, however, do not support the Norcliffe and Heidenreich hypothesis. In the same area, the earlier Kirche site contained longhouses both within and outside of the defences with both groupings of dwellings being oriented in similar three different orientation patterns (C. Ramsden 1989:Fig.4). At the Keffer site north of Toronto the initial seven longhouses were torn down and replaced with fourteen longer houses protected by extensions of the palisades to the north and west (Finlayson et al. 1987). The fact that the original seven houses were so widely spaced suggests that the initial occupants may have been expecting a major population addition. Two small circular to ovate structures at the ends of two of the longhouses represent special purpose structures. This village was also somewhat unique in having a large central plaza and being situated on two different elevated plateaus. An ossuary was situated 0.8 km outside of the village.


HAMILTON SITE (AlHa-5)
AREA A and D
Area D
house 5
house 2
house 1
disturbed soil conditions
KEY
Limit of Excavation
Post Mould
Burnt Post
Pit
Hearth
Stain Feature
Feet

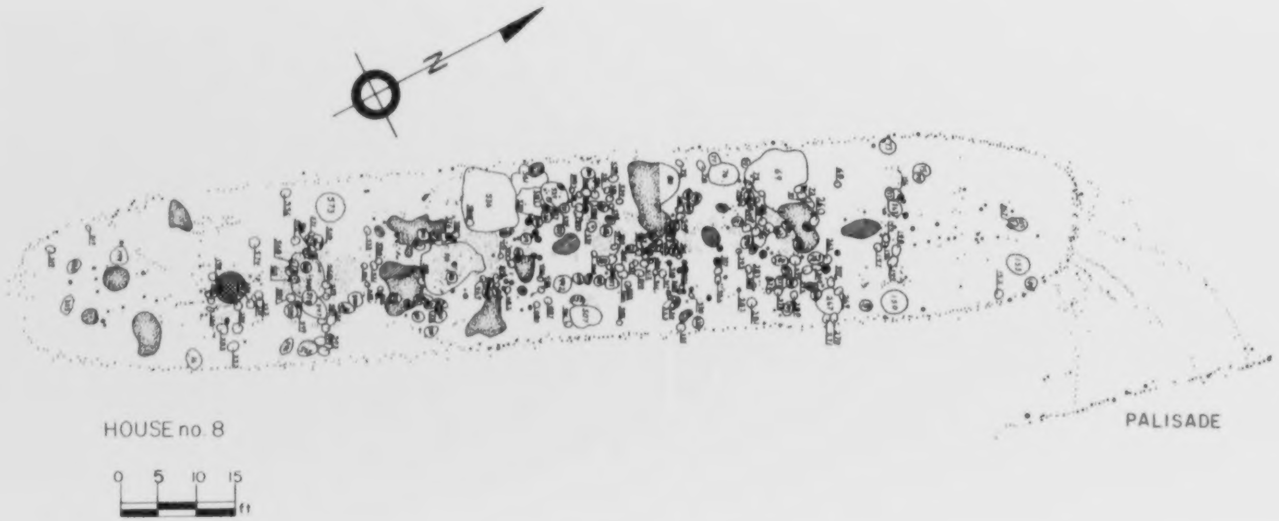
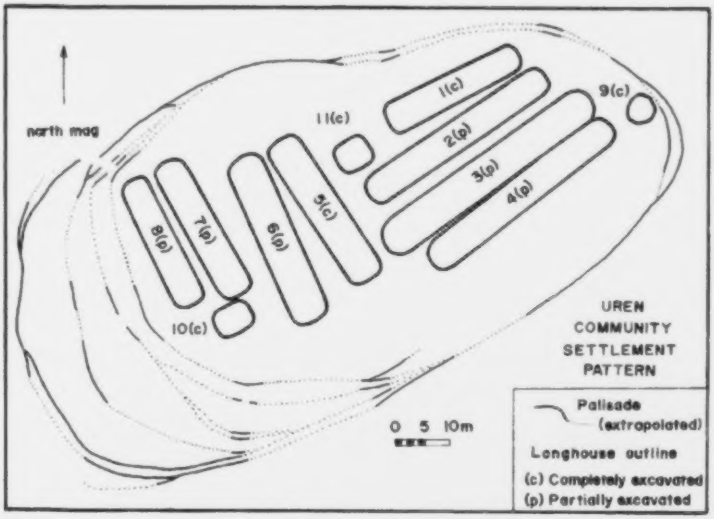
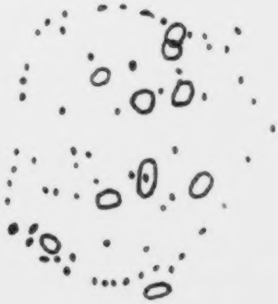


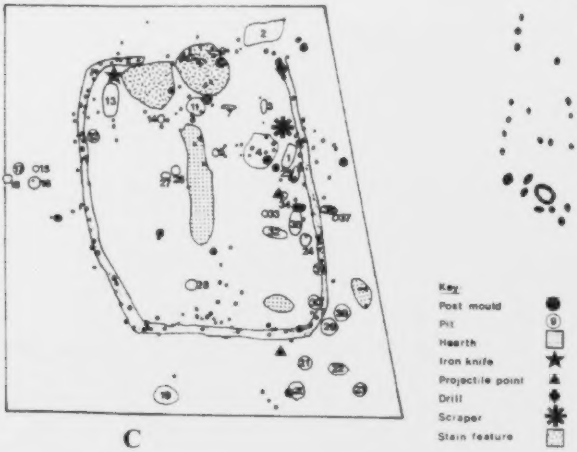
FIGURE 123: LONGHOUSE FLOOR PLAN COMPARISON A mid-14th century Middleport period longhouse from the Nodwell site below is compared with houses from the early 17th century Neutral Hamilton site above. The Nodwell floor plan, with its large number of interior pit features, is typical of Uren and Middleport house floors of the Middle Ontario Iroquois stage. These particular illustrations also show how houses were often attached to the interior stockade line to create interior defensive cul-du-sacs. The Hamilton site floor plan illustrates the distinctive "slash-pits" which partitioned off the private cubicles along both sides of the house as well as the storage cubicles at both ends of the dwelling. Slash pits, which appear to have involved the use of split cedar rails rather than poles, have also recently been identified on late Huron sites (Lennox 2000). (Reproduced, respectively, from Wright 1974:Fig.15 and Lennox 1981:Fig.3, in part)


north mag
1(c)
2(p)
3(p)
4(p)
5(c)
6(p)
7(p)
8(p)
9(c)
10(c)
11(c)
UREN
COMMUNITY
SETTLEMENT
PATTERN
0 5 10m
Palisade
(extrapolated)
Longhouse outline
(c) Completely excavated
(p) Partially excavated

A



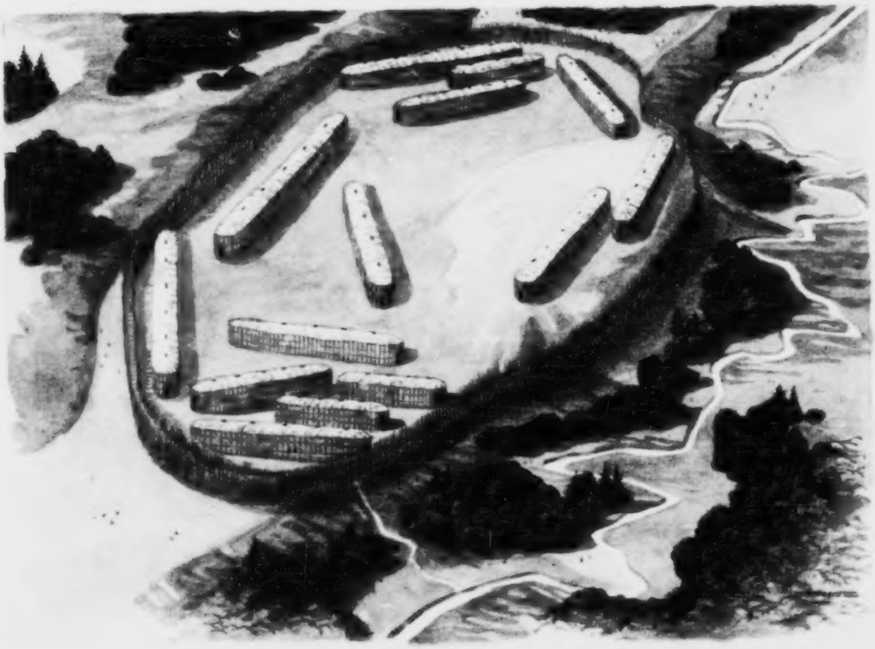
B

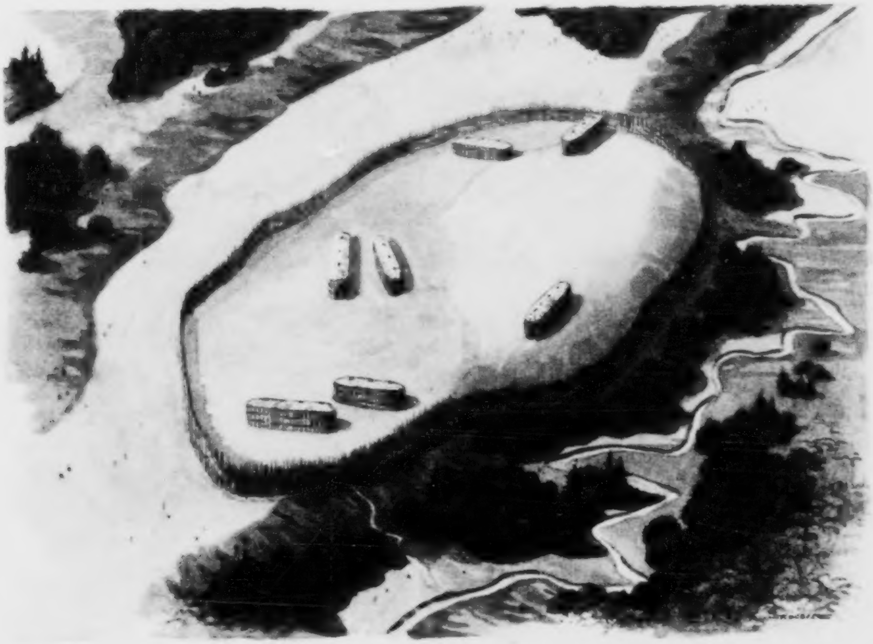

Key
Post mould
Pit
Hearth
Iron knife
Projectile point
Drill
Scraper
Stain feature

C

FIGURE 124: A SPECIAL PURPOSE HOUSE FLOOR COMPARED TO A SMALL HABITATION HOUSE FLOOR PLAN To the left (B) is the floor plan of a special purpose house at the late 13th century Uren site situated at the eastern edge of the village (A). The 5 m oval shaped structure (labelled 9 (c)) was attached by a line of posts to the corner of one of the adjacent typical longhouses, lacked evidence of a central hearth floor or a bunkline, contained few interior features, and was of comparatively flimsy construction. Under the circumstances, the structure was not likely used on a year-round basis. It is possible that it functioned as temporary quarters for visitors. In contrast, the house floor from the early 17th century Neutral Walker site (C), although unusually small, measuring only 6.4 by 5.6 m, in all other respects resembles the more typical longhouses at the site and is inferred to have housed one or two nuclear families. The house wall trenches are particularly well defined in this floor plan. (Uren site detailed plan provided by M. J. Wright and plans A and C reproduced, respectively, from M. J. Wright (1986:Fig.6) and (1981:Fig.10)).

One of the most completely excavated late16th century Huron sites is the Ball site (Fitzgerald et al. 1995; Knight 1987). This 3.5 ha Arendarhonon tribe Huron town in southern Huronia was completely excavated over a period of time begun in 1975 by Dr. Dean Knight. Situated on the side of a slope with protection from northern winds and with three springs near at hand, the town began as a village of 1.5 ha which was subsequently joined by another substantial village of approximately 2 ha. The seventy-one longhouses averaged 7 m in width and were up to 40 m in length but with the majority being 25 m long. Three small structures are speculated to have been special purpose buildings (Knight 1987:181). The majority of the houses in both the original village and the expanded town were oriented parallel to one other although there were exceptions. There was some suggestion of houses grouping around small plazas. It is very likely that the equally large but later Warminster site, 4 km to the northwest, is the direct descendant of the Ball site. It was this former site which was likely visited by Samuel de Champlain in 1615 when it was known as Cahiagué (Fitzgerald et al.1995:131). The village of Cahiagué is unique in having been divided into two self-contained, heavily defended communities separated only by a mutually defensive intermediate area (Heidenreich 1987: Plate 34). Thus the estimated 10 ha of site area, covering approximately 730 by 140 m, actually is considerably smaller in terms of the areas incorporated by the two palisaded salients. Dividing an extremely large town into two mutually supportive units is a more practical defensive strategy than attempting to surround the entire community by a single defensive system. Two ossuaries were situated a short distance south of the southernmost town unit. One of these measured 5.5 m in diameter and was 1.4 m in depth. Except for two flexed adults on the floor of the grave pit all of the human remains were represented by secondary burials. An abundance of marine shell beads and European glass beads, as well as other items, had been placed with the deceased (Thomson 1948). A contemporary palisaded village, named after the





COLOUR PLATE XXV: A RECONSTRUCTION OF THE TWO CONSTRUCTION PHASES OF THE KEFFER SITE The lower drawing shows the original small village of seven widely spaced longhouses while the upper drawing represents the final village of fourteen longhouses contained within an expanded defensive system. The large central plaza is not a common feature of Iroquoian villages although smaller, outside work areas are commonplace (Reproduced with permission of the London Museum of Archaeology from Finlayson et al.1987:18 & 19; artist Ivan Kocsis)

Recollet LeCaron who visited it in AD 1615, occupied 1.6 ha. The longhouses were so closely packed together that defensive considerations must have over-ridden the heightened threat of accidental fire (Johnston and Jackson 1980:176-177). House ends faced the palisade thus creating numerous cul-du-sacs between the closely spaced house walls (Ibid:Fig.5). A nearby cemetery, represented by individual disarticulated remains on the surface of shallow depressions which were undoubtedly directly under the original burial scaffolds, appears to have been abandoned prior to final burial in an ossuary (the late Dr. James E. Anderson: personal communication). The inability to perform the culturally cohesive ceremony of the Feast of the Dead or the Kettle is suggestive of a critical breakdown in social cohesion, at least as far as it pertained to the deceased of the LeCaron site. Such cemeteries are rarely located, being outside of the village away from the excavations, although at the early 17th century Melville site a largely destroyed cemetery was situated 170 m east of the village (Savage et al. 1990:55) and an intact small cemetery was also located outside of the Bosomworth village north of Toronto (Emerson 1959).

The generalization "...that exchange is an inducement to or source of war and not a bulwark against it" (Keeley 1996:131) is not borne out by the limited evidence of intertribal trade during Period V except for the early European contact period when trade in marine shell beads and catalinite from the upper Great Lakes markedly increased. Trade relationships between tribes were also variable. The high quality Kettle Point chert of the southeastern shore of Lake Huron naturally is common on sites close to the source but also occurs in some abundance on Tionnontaté sites at the southern end of Georgian Bay. In contrast, it is rarely found on the immediately adjacent Huron sites to the east. As well, little of this material is found on sites located in the southern Niagara Escarpment or eastward (Janusas 1984:Fig.29) but is common on Neutral sites in the London area suggesting that a trade relationship existed between these Neutral communities and the Tionnotaté to the north.

Archaeological research on the Huron is only beginning to attempt to distinguish between the various tribes which made up the Huron Confederacy at the time the French visited Huronia. A start in this area has been made using settlement pattern characteristics (Latta 1985) and even specific attributes of pottery (Curtis and Latta 2000) although a considerably larger constellation of cultural traits, technological, settlement, and perhaps cosmological will be required in order to convincingly distinguish between the different tribal groups.

NEUTRAL-ERIE

In a number of respects the archaeological developments leading to the Neutral Confederacy are better known than that of the Huron Confederacy, largely due to an active programme initiated in the 1970's by Dr. William C. Noble and his students out of McMaster University in Hamilton, the activities of the London Museum of Archaeology under the direction of Dr. William D. Finlayson, and the Department of Transportation, Ontario, particularly due to the productivity of Mr. Paul Lennox. Unlike the Huron, however, there is very little in the French documentation pertaining to these people, who, after being decimated by European introduced disease, were dispersed by the Seneca and their Mohawk allies in 1652. For succinct historical outlines of the Neutral, the Wenro, and the Erie see White (1978 and 1978a).

The population clusters making up the Neutral confederacy occupied discrete geographic regions. Between the City of London and Lake Erie, for example, there were at least five different communities with their own developmental histories which progressively shifted up different drainage systems away from Lake Erie (Phil and Thomas 1997:Fig.17). For an overview of the Neutral see Lennox and Fitzgerald (1990). As with the Huron, the Neutral were decimated by European introduced disease during the epidemics of AD 1634 to1640. Although the evidence is equivocal the combined populations of the Neutral, Erie, and Wenro could have exceeded the population estimate for the Huron and Tionnontaté (Clermont 1992:Tableau 3). A unique settlement feature is the distribution of contact period ossuaries which ring the boundaries of Neutralia, a distribution which is particularly graphic in the eastern extension of the Niagara Peninsula of Ontario between lakes Ontario and Erie where there were relatively few villages (Noble 1984:Fig.4).

What follows will focus on the Neutral Confederacy. The tribes making up the Neutral, Erie, and Wenro appear to represent the end products of a Uren-Middleport expansion out Southern Ontario into adjacent southwestern New York State. A site size and function classification applied to Neutral sites is as follows: agricultural cabin site = one or two seasonally occupied longhouses; hamlets = <1 acre(0.4 ha); villages = 1 to 5 acres (0.4 to 2.0 ha); and towns = > 5 acres (2.0 ha >) (Lennox and Fitzgerald 1990).

Settlement pattern determinants for contact period Neutral sites were essentially the same as those for pre-contact settlement: productivity of soils and ready access to animal and plant resources; suitable topography for defence and natural drainage; reliable water supplies; proximity to chert sources and marshes harbouring winter deer yards; and strategic location relative to neighbouring tribes. Unlike the Huron, Neutral longhouses frequently possess squared ends and occasionally were almost square, small dwellings (Noble 1984; M. Wright 1981:Table 2). Sites are generally situated adjacent to small creeks and springs rather than large rivers where they would have been more vulnerable to attack. Exceptions are the norm, however, and the palisaded contact period Fradenburg village was situated directly on the bank of the Grand River (Poulton et al.1996). In contrast, small seasonal and special purpose sites were frequently situated along the major waterways. Earthwork defences, like those of the St.Lawrence Iroquois, are not uncommon among both the Neutral and the Erie. It appears that the soil from one or two ditches surrounding a village would be mounded up to form the earthwork with stockades being set into the mounded earth. In most instances levelling of the earthwork by modern agricultural has destroyed most evidence of the palisades but the barrow ditches are still clearly apparent below the modern plough zone. Neutral longhouses range from 6 to 123 m in length with a tendency through time for the houses to become shorter whereas house widths are relatively constant at 7 m. Longhouse walls often consist of two parallel row of posts suggesting that two rows of bark were used to create an insulated area of dead air (Lennox and Fitzgerald 1990) or possibly allow for insulating material like corn stalks and husks. Even with the single row of house wall posts both exterior and interior faces were likely sheathed with bark with insulating materials in between.

The 2.7 ha contact period Hood site was surrounded by five rows of palisades but lacked evidence of any preferential orientation of the longhouses relative to one another. Some wood preservation, a rare occurrence, is recorded. White cedar (*Thuja occidentalis*) was the preferred species of the palisades, house posts, and interior partitioning "slash pits", although some red oak (*Quercus rubra*) house posts were also recorded. Storage pits with wooden slat liners on the bottom and bark along the sides, mainly of beech (*Fagus grandifolia*) but also grass and other woods, were noted (Lennox 1984:131). Contemporary with the 1630 to 1641 Hood site was the unpalisaded Bogle I hamlet consisting of seven houses with two being small and almost square. Similarly, the 2.4 ha Hamilton site in the same area, estimated to date between AD 1640 to 1651, was contemporary with a small hamlet of four + dwellings surrounded by a flimsy single palisade. Evidence indicates that the hamlets were occupied year-round and were not just seasonal farming satellites of the large villages or towns. The pattern emerging is one of large villages and towns associated with a number of smaller villages and hamlets in close proximity to one another along a specific drainage system. Such site clusters are regarded as representing individual tribes, approximately nine of which are believed to have constituted the Neutral Confederacy in the early 17th century (Lennox 1981; 1984).

While the large villages and hamlets were, in most respects, essentially similar to one another there were some differences. There was a comparative scarcity of trade items, including European objects, on the satellite sites and a higher frequency of inferior chert. House lengths of village longhouses were nearly twice that of the hamlets. Villages were also heavily defended compared to the hamlets. Similar percentage frequencies of the distinctive Fire Nation pottery (Western Basin culture), presumably the product of women captives, on both the Hamilton village and the Bogle II hamlet, however, clearly indicated military collaboration between villages and hamlets (Lennox 1984:271). The foregoing suggests that "...the villages were in fact centres of socio-political and economic affairs, through which funnelled the relationship and material benefits of extra-tribal affairs. Hamlets on the other hand were subsistence oriented relying on the villages for specialized and foreign concerns" (Lennox 1984:273). Not all large villages or towns, however, were palisaded. The contact period 4.0 ha Walker site, believed to be the capital village of the Neutral Confederacy which was visited by the priests Jean de Brebeuf and Joseph Chaumonot in 1640-41, lacked defences (M. Wright 1981). The lack of concern with defence at the Walker site stands in marked contrast to that of the 16th century 2.0 ha Lawson site which was situated on a narrow plateau 14 m above the flanking streams with earthworks at two of the narrow ends of the site with the remaining periphery being protected by stockades (Wintemberg 1939:Fig.1). Contemporary with the Lawson site was the Southwold earthworks site (Smith 1977). Excavated initially by William J. Wintemberg it was not reported upon by him; in all likelihood because it was so similar to the Lawson site. The Southwold site contained 18+ longhouses surrounded by two encircling earthwork rings and had a small creek running through the village. Such defensive works were needed given the total lack of natural defensible topographic features in the area. It appears that at this site the stockades were erected first, a single row in the outer earthwork and a double row in the inner one, and then the earthworks were mounded around them. The tightly packed houses, occupying the 0.8 ha of living space, would also have been an added internal defensive measure. There was what appears to have been a guest house lacking ends located on the northern edge of the village near a break in the earthworks (Smith 1977:Fig.5, 47). It was estimated that between 800 and 900 people occupied the village.

The region of the City of London on the Thames River has been subjected to extensive archaeological reconnaissance and excavation by the London Museum of Archaeology and others as it was the centre of a major Ontario Iroquois cultural development which extended from the Middle Ontario Iroquois stage well into the 16th century. Expanding City suburbs have required considerable archaeological salvage work. The earliest recognized seasonal cabins pertain to this area and would have been associated with two of the major villages; the 2 ha Lawson site and the 1.6 ha Pincombe 1 site (Pearce 1983; Pearce and Catsburg 1985). The two villages are situated 10 km apart and would have represented separate contemporary communities as would three other communities within a 30 km radius of London. The Windermere cabin site consisted of a single 11 by 7 m lodge, open at its northern end, which contained a single central hearth and a pot placed in a pit although another hearth and some pits occurred outside of the dwelling as well as a possible drying rack (Pearce 1983:5). Two other cabin sites were essentially the same (see Figure 120). Two overlapping cabin site longhouses at the Pincombe 2 site, associated with the Pincombe 1 village site, indicated repeated use of a single locale (Pearce and Catsburg 1985:Fig.2).

It was recognized years ago that the Iroquoian sites in the Niagara Frontier area of western New York State could be Neutral, Wenro, Erie or some related splinter group but that specific ethnic identification was difficult given the limited nature of the early European documentation and apparent similarities in the archaeological assemblages (White 1961:50). None of these groups occupied the Niagara Frontier after AD 1655 when the area eventually became part of the Seneca frontier. A likely candidate for an Erie village is the Ripley site, a 0.3 ha double earthwork early contact period site with an adjacent cemetery, situated on the shore of Lake Erie in extreme southwestern New York (Parker 1907). The village floor plan is too schematic to say much other than that there were numerous pits, including some very large ones, and many post moulds. The cemetery appears to have been divided into two parts (Ibid: Plate 5) raising the possibility of a moiety burial arrangement such as have been recorded at the Uren stage Tabor Hill double ossuary burial site east of Toronto and the 17th century Huron Cahiagué site. In most respects the technology of the Ripley site is quite similar to that of southern Neutral sites in Ontario, such as the Walker site (M. Wright 1986). The burial pattern was different from most Neutral sites, however, in consisting of single and multiple primary burials but, like contact Neutral cemeteries, were richly provided with grave offerings of pottery vessels, pipes, marine shell beads, and other items of native and European manufacture. Iroquoian sites in this area of New York are characterized by considerable shell tempered, cord marked pottery which likely reflects their proximity to Monongahela sites to the south and possible hostilities with same.

Launching a new and exciting dimension in Iroquoian settlement pattern studies is William D. Finlayson's four volume regional study of the 650 year (AD 1000-1650) Iroquoian occupation of the Niagara Escarpment region (Finlayson 1998). A product of 25 years of research involving 76 village and hamlet sites, this in depth study has elevated settlement pattern research to the study of actual communities and their progress through time and space. Consideration of this major research effort has been left to the last, not only because of its overall significance to future research but also because the end product of the development involved elements of both the Neutral and Huron confederacies. Finlayson's work is the cumulation of the study of discrete Iroquoian communities which have been evolving in Ontario over a number of years (Finlayson 1985; Lennox and Fitzgerald 1990). The Niagara Escarpment sequence begins with a regional expression of the Pickering complex and then follows through in an unbroken sequence from Uren to Middleport into proto-Huron and proto-Neutral . It is unknown what happened to the proto-Huron communities but they could possibly be represented at large villages like Seed-Barker on the Humber River north of Toronto with its unusual mixture of Huron and Neutral pottery traits. The Neutral tribe(s) continued to evolve in place from their Middleport roots to the time of European contact.

A particularly informative aspect of the Niagara Escarpment research has been the interdisciplinary research carried out around Crawford Lake. This small, deep lake, probably the result of glacial plucking of the limestone bedrock, has preserved an exceptional varve record. Varves are the product of a natural sedimentary process whereby pollen and plant macrofossil materials are preserved in thin layers of sediments during the biannual depositional cycle with its contrasting summer and winter deposits. Each thin varve deposit represents one year and thus by coring the lake sediments it is possible to count varves and calculate the number of absolute years involved. Products incorporated into the varves from nearby archaeological sites, such as corn pollen, portulaca seeds, and sunflower husks, permitted the association of certain varve core segments with archaeological sites. This process has the potential to considerably refine the coarse grained radiocarbon chronology and, in particular, to extend the time span of the all important Middleport period by some fifty years (see Table 25). Thirty Middleport villages, for example, have been recorded in the area (Finlayson 1998:374). Three discrete clusters of these sites in the Crawford Lake area are regarded as distinct communities as are a number of peripheral localities whose interrelationships are studied from the points of view of settlement, subsistence, and technology (Ibid: Chapter 7). In addition to villages and their satellite communities, cabin sites, a rock shelter, food processing stations involving hunting-fishing-miscellaneous activities, and burial locations are also described. Some villages were palisaded and others not. Particularly important has been the massive descriptive exercise, a necessary prerequisite to tracing communities through time as villages periodically relocated. While some may find such enormous bodies of minute data daunting they are the essential foundation of the advancement of knowledge. Generalizations are ultimately based upon the concrete details and theory testing can only be achieved using the patterns and phenomena abstracted from said data. For example, the detailed consideration of a number of different data sets supports the conclusion that satellite communities associated with a major village were not simply the product of population overflow from the larger community but represented discrete communities in their own right. Thus, "The above data indicate that is possible to identify, on the basis of a variety of material culture traits, different communities of Ontario Iroquoians who lived in close proximity to each other. Further, it is possible to trace changes in material culture in sequentially-occupied villages of the same community as well as changes between villages and hamlets/satellites in the same locality and between villages and hamlet/satellites in adjoining localities" (Finlayson 1998:407).

Cosmology:

Cosmology, used here as a theory or postulate accounting for the evolution and structure of the universe, is preferred to the word "religion" as in most societies, including Iroquoian ones, the sacred and the secular were essentially viewed as parts of a whole rather than distinct entities in themselves. Adherents of formal, highly structured religions, such as those of the Judeo-Christian-Islamic tradition, have tended to compartmentalize the sacred and the secular despite the contrary intent repeatedly expressed in the writings of the Holy Books and undoubtedly to the despair of religious instructors. There are a number of archaeological facets of Ontario Iroquois culture which can be associated with cosmology. Foremost is the manner in which the remains of the deceased were treated. Other elements of culture that would fall into the cosmology section and are archaeological detectable are as follows: animal burials; artifact caches; features like sweat lodges; certain artifact forms; evidence of prisoner sacrifice and witchcraft; sacred sites; and certain landforms. Smoking and the pipes associated with the act are also more appropriately considered under cosmology. The tobacco specie used by the ancient Iroquoians, and still used ceremonially by some elements in the present day Iroquois society, is *Nicotiana rustica*, a tobacco strain with a far greater hallucinogenic influence than the current commercial variety, *Nicotiana tabacum*. The richness and complexity of Iroquoian intellectual culture is, of course, unavailable to archaeological scrutiny. Linguistic evidence from the Seneca relative to the linguistic assumption that unanalysable words tend to be more ancient than analysable words, suggests that shamanism was older in the area than the calendrical ceremonialism associated with horticulture (Foster 1996:106-107). Further, cross language borrowings between Iroquoian and Algonquian people, where intruders can be expected to adopt borrow words from the language of the initial occupants, does not support the hypothesis of an Iroquoian intrusion from the south into their present homeland in northeastern North America.

Burial practices of the Ontario Iroquois were variable through time and space. The most striking practice was the final burial of the deceased of a community or a number of related communities in a common grave or ossuary in the form of the mainly disarticulated human remains removed from the village cemetery. In 1636, the Jesuit Father Jean de Brébeuf witnessed and described a ceremony involving an ossuary burial outside of the Huron village of Ossossané, a ceremony referred to as the Feast of the Dead or Kettle. The ossuary was subsequently excavated by an archaeologist (Kidd 1953). As has been aptly noted, "By joining in a common tribute to the dead, whose

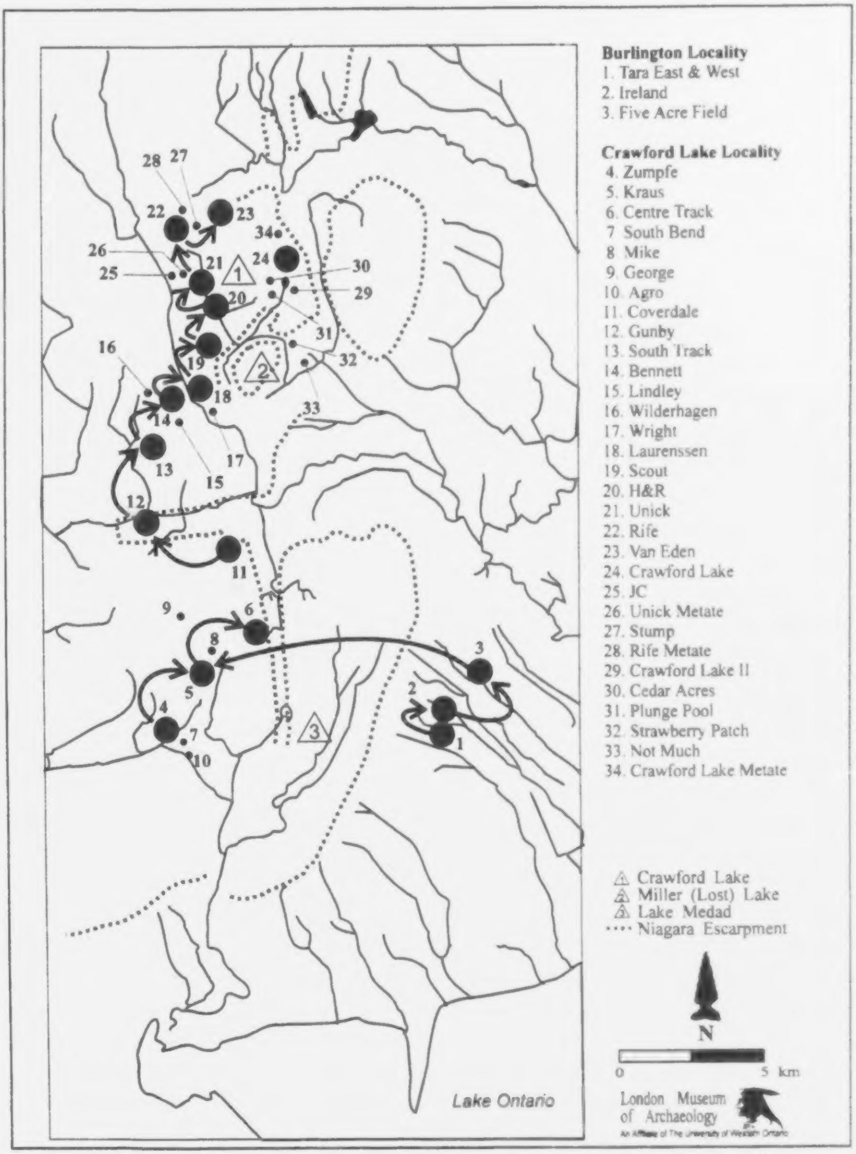

Burlington Locality
1. Tara East & West
2. Ireland
3. Five Acre Field
Crawford Lake Locality
4. Zumpfe
5. Kraus
6. Centre Track
7. South Bend
8. Mike
9. George
10. Agro
11. Coverdale
12. Gunby
13. South Track
14. Bennett
15. Lindley
16. Wilderhagen
17. Wright
18. Laurenssen
19. Scout
20. H&R
21. Unick
22. Rife
23. Van Eden
24. Crawford Lake
25. JC
26. Unick Metate
27. Stump
28. Rife Metate
29. Crawford Lake II
30. Cedar Acres
31. Plunge Pool
32. Strawberry Patch
33. Not Much
34. Crawford Lake Metate
1 Crawford Lake
2 Miller (Lost) Lake
3 Lake Medad
Niagara Escarpment
N
0
5 km
Lake Ontario
London Museum of Archaeology
An Affiliate of The University of Western Ontario

FIGURE 125: HYPOTHESIZED COMMUNITY MOVEMENTS OVER APPROXIMATELY 500 YEARS IN THE NIAGARA ESCARPMENT AREA Pertaining mainly to the Crawford Lake locality this illustration traces the movement of communities out of the south from the early Pickering complex sites in the Burlington area around AD 1000. The locations of Crawford Lake, Miller Lake, and Lake Medad are also given as it was from these lakes that critical varve and botanical evidence was extracted. (Reproduced with permission, Finlayson 1998: Fig.I.2.11)

memory each family loved and honoured, the Huron were exercising a powerful force for promoting goodwill among the disparate segments of each village, each tribe, and of the confederacy as a whole. The importance of this most sacred of Huron ritual made it, in effect, a microcosm of the structures and values upon which Huron society as a whole was based" (Trigger 1976:90). The ceremony witnessed by the French at Ossossané was the product of a long history. The practice of temporarily placing a body on a scaffold or in a grave with eventual removal of the disarticulated skeletal remains to a final burial place was both ancient and wide spread across Canada and elsewhere. The extension of the practice beyond the immediate family, however, was more restricted. In some instances, possibly relating to winter deaths, bodies were temporarily buried within the longhouse as evidenced by small skeletal items, like teeth and hand and foot bones, being left in the temporary grave pit when the majority of the remains were removed for final interment in an ossuary. Sometimes, however, the disarticulated remains of both adults and children were left undisturbed in a house pit (M. Wright 1986:18). In such instances special circumstances, such as the cause of death, could alter the inclusion of some individuals in the ossuary. Among the Iroquoian peoples of eastern North America ossuary burial was typical of only the Huron-Tionnontaté and the Neutral and, in part, the Erie (Johnston 1979; Parker 1922:176-178). For a consideration of Ontario Iroquois ossuary burial viewed through both time and space see Johnston (1979).

The earliest evidence of ossuary burial comes from the 9th century Miller site east of Toronto (Kenyon 1968:21-23). Here the majority of the ossuary pits contained only three to four individuals and probably represented family graves. One ossuary, however, held thirteen individuals which included adults, adolescents, and juveniles. Only a single primary or articulated adult body was included in one of the small family(?) ossuary pits. Characteristic features of these early Ontario Iroquois ossuaries were the presence of both adults and children, the absence or scarcity of grave offerings, and the often incomplete nature of the human remains. A small ossuary of five individuals from the 10th century Richardson site near Rice Lake, however, contained only adults (Pearce 1978a). By the late 12th century to early 13th century another Toronto area ossuary "...contained the jumbled remains of 87 individuals, consisting of 58 adults, 23 juveniles, and six infants" (Andreae et al. 1998:7) indicating that the practice of a common grave had been extended to the larger community and not just the family or even a clan segment. A small turtle effigy pottery pipe was the sole grave offering found at the bottom of this particular ossuary pit. Turtle pipe effigies are not only rare but effigies of any kind, as a rule, are absent from the Pickering complex. Turtle was an important supernatural being in the Iroquois Creation story, not only as the supernatural being upon whose back the earth rested but also as the deity who saved the good creator twin from his nasty grandmother and scheming brother (Fenton 1998:Chapter 2). The Moatfield site turtle effigy provides possible tangible evidence for the antiquity of the creation story although, as a version of the Earth Grasper myth (Hall 1997:Chapter 3), a far greater antiquity is probable. At the 11th century early Pickering Tara East site at the western end of Lake Ontario four burial pits were located within the confines of the village. Two of pits were temporary burial locations from which the remains had been removed leaving only some small bones and teeth while another consisted of a small ossuary containing the remains of five individuals. The remaining burial pit contained a flexed adult (Finlayson 1998:181). The emptied grave pits suggest the existence of another ossuary somewhere in the vicinity. By late Pickering times, as seen at the Bennett site, single and paired burials in the village proper in the form of both primary and secondary burials were identified although there were no ossuaries (Wright and Anderson 1969). It is possible that by this time the ossuaries were being increasingly located some distance from the village. Pertinent to the recorded Huron belief that the weak spirits of the very old and of children remained near the village where they died (JR X:145) was one of the Bennett site graves. It contained the bundle burial of a three year old and the feet, knee caps, shoulder blades, and collar bones of an adult; the adult remains representing the same body parts missing from the grave of a dismembered old male buried 3 m away (Wright and Anderson 1969:12). Presumably the adult body parts were intended to provide spiritual support to the soul of the young child. By the late 13th century in the Toronto area the two associated ossuaries at the Tabor Hill site contained the remains of 523 individuals in the form of mixed bones, bone bundles, and two cremations (Churcher and Kenyon 1960). This burial site has been associated with the Uren stage Thomson village site and while the specific association has been questioned (Dodd et al. 1990:353) there are no other known candidate villages in the immediate area. It is worth noting the occurrence of two ossuaries. This association could possibly indicate the presence of a moiety made up of two groupings of different clans responsible for burying each others dead (Fenton 1998:27). Archaeological evidence suggestive of this practice in eastern North America goes back to at least 1,000 BC (Wright 1999:695). It is also worth noting the presence of two cremations and the historically documented practice of the Huron cremating witches (Tooker 1991:119). If the association of witches with cremation was absolute the foregoing would indicate that the remains of people executed for witchcraft were not excluded from the communal burial pit of the community.

By Middleport times, in the 14th and 15th centuries and probable early 16th century, large village sites become increasingly common as do large ossuaries. One of the earliest physical anthropological reports on an ossuary was the Fairty site north of Toronto which contained a minimum of 512 individuals (Anderson 1964; see **Human biology**). The small ossuary of twenty-five individuals immediately east of the Middleport village site (Wintemberg 1948:39), on the basis of artifact content, likely pertained to the Princess Point complex prior occupation of the site. Three km east of the Nodwell site on Lake Huron the severely wind eroded cemetery consisted of a small ossuary containing the disarticulated remains of an adult and three children in addition to a separate infant buried in a pottery vessel (J.V. Wright: field notes). Like the Tabor Hill ossuaries, which were situated on the highest hill in the area, the Nodwell cemetery was located on the edge of an elevated ancient strandline overlooking Lake Huron. At the Crawford Lake site in the Niagara Escarpment nine features containing a minimum of twelve individuals included a flexed child burial and a child bundle burial in two different house floors. Included with the latter burial was the proximal end of a calcined adult middle finger which possibly represented a war trophy. Another house pit contained the left articulated distal end of a forearm and attached hand. Outside of the houses a flexed adult female had been partially covered with rocks. Another flexed adult female bore evidence of torture by fire (Esler 1998:164).

Contrary to Dodd et al. (1990:354) multiple secondary burial ossuaries typical of the Pickering complex and later are not characteristic of Glen Meyer complex sites. In an evaluation of the burial practices of the Glen Meyer and Pickering complexes Michael Spence (1994) concluded that they were essentially the same. Regrettably, his data was not only incomplete but some of the cultural assignments are questionable. The Glen Meyer complex appears to have had isolated mortuary longhouses or cemeteries with bundle burials rarely being encountered in villages and camps. With reference to the single proposed Glen Meyer ossuary, the Rogers Ossuary, it is not known whether the bodies were disarticulated, articulated, or some combination of the two burial patterns. In contrast to the location of the Rogers Ossuary, which was isolated from any settlement, both secondary and primary burials and ossuaries are common within Pickering complex villages.

Huron ossuaries up to10 m in diameter and 3 m deep, containing the disarticulated remains of as many as 1000 individuals, have been identified (Kidd 1953). Numerous precontact and contact Huron ossuaries in Huronia were vandalized by white settlers in the 19th and early 20th centuries. Among the looted materials are reports of skulls with holes drilled in them (Hunter 1907), a Western Basin culture trait that may represent the remains of some Algonquians from the Lake Huron region being included in the communal grave. This possibility, however, must await confirmation and, regardless, if skull perforation was present it was an extremely rare occurrence. In addition to ossuary burial the Huron also buried young children in houses and, on occasion, adults were buried outside of the houses and even outside of the village (Knight and Melbye 1983; Williamson 1978). The thirteen village pit burials at the early 17th century Ball site contained both sexes and ranged in age from six months to fifty years (Knight 1987:186). What have been interpreted as emptied grave pits in longhouses have been identified at the contemporary Molson site (Lennox 2000:27). Similarly, at the 16th century Keffer site, while the ossuary was located some distance to the southwest of the village on an elevated terrace, a primary burial area was located immediately outside and east of the village and contained two articulated burials and a number of pits which are believed to have once contained bodies which were subsequently reburied in the ossuary. Six large posts associated with the cemetery area may represent the remains of scaffold posts (Finlayson et al. 1987). As is usual, the majority of longhouse burials at the Draper site were primary interments of children and infants although adult bundle burials are also recorded (Finlayson 1985:280). With reference to child burials, it was noted by Father Jean de Brébeuf with reference to the Huron that, "There are even special ceremonies for little children who die less than a month or two old; they do not put them like the others into bark tombs set up on posts, but inter them on the road, - in order that, they say, if some woman passes that way, they may secretly enter her womb, and that she may give them life again, and bring them forth" (JR X:273). Presumably, burial within a dwelling would be an even more advantageous placement for a child's opportunity for rebirth. For additional information on child burials in longhouses see Kapches (1976:Table 2). At the Bosomworth site north of Toronto a cemetery was located approximately 275 m from the village (Emerson 1959). It contained individual grave pits with articulated, bundle, and dismembered individuals representing fifteen adults and nine infants and children (Anderson 1962). In one instance infant twins were buried facing each other. Twins may have held a particular significance relative to the supernatural twin brothers, Iouskeha and Tawiscaron, who were responsible, respectively, for all that was good and bad on earth. Skull fractures and arrow wounds were common and may explain why these individuals did not receive final ossuary burial. Similarly, at the Mackenzie site small cemeteries containing both primary and secondary burials were located immediately outside of the village (Saunders 1986).

Unlike their Huron neighbours Neutral ossuaries were sometimes located within the confines of the village. At the contact period Walker site ossuary burial, multiple and single burials, and longhouse burial occurred both within and along the edge of the village although most were concentrated on two knolls within the village (M. Wright 1981:50, 115). Earlier burials frequently were disturbed by subsequent ones suggesting marked burial plots or possibly hasty burial relating to the smallpox epidemic of 1638-39. In marked contrast to the Walker site, the slightly later Hamilton site lacked evidence of burial in the village (Lennox 1981). Neutral ossuaries, on occasion, had two layers of human bone separated by a layer of sterile soil (Ridley 1961; White 1966; M. Wright 1981). In one instance a discrete pit, separate from the main burial pit, occurred in the bottom of the ossuary (Reid and Conway 1976). Unlike the Huron there are usually multiple ossuaries associated with individual burials, all within a large cemetery area. As with the Huron, however, infant burials within the longhouse are common. Less common are adult in-house burials. The archaeological excavation of the contact period Grimsby burial site revealed that it was apparently in use before, during, and after the European introduced epidemics of 1634 to 1640 (Kenyon 1982; Lennox and Fitzgerald 1990:453). The Grimsby site involved more than fifty-five burial pits arranged in the form of an east-west oriented oval. Grave pits contained from one to one hundred and four individuals. Articulated, semi-articulated, bundle, and scattered bundle burials were all represented with most being richly provided with offerings (Kenyon 1982:Figs.2 & 3). During the pre-epidemic period single ossuary pits were typical with the peripheral primary burials around the ossuaries likely being subsequent interments. The complex pattern of concentrated graves at the Grimsby cemetery rarely intersected one another indicating that the graves were clearly marked on the surface (Kenyon 1982:226). Even the depths at which bodies were buried were known, as demonstrated by superimposed bodies where the most recent interments did not disturb the earlier, lower ones.

While Pickering ossuaries prior to the 14th century sometimes contained a limited number of grave offerings (Johnston 1968a; Andreae et al. 1998; Kenyon 1968) such offerings are subsequently absent until the contact period when an abundance of grave offerings were lavished on the deceased. This sudden change in pattern has been attributed to a need to redistribute an abundance of riches (Ramsden 1981). Gambling, inter and intra tribal negotiations, dream fulfilment, and blood payments, however, would have all redistributed goods prior to the appearance of European trade items. Many of the items which suddenly appear in ossuaries and graves with the advent of the Europeans are also of native manufacture, such as marine shell beads and pendants, pottery vessels and pipes, and stone and bone ornaments. It is more likely that the consequences stemming directly and indirectly from the arrival of Europeans are responsible for the sudden change in the deposition of items with the deceased. During a time of change and stress there would have been an increased need to seek assistance from one's deceased relatives.

Butchered dog bones are common in the middens and pits of all Ontario Iroquois sites and are clearly indicative of ceremonial dog feasts; a common cultural trait across eastern North America. The dog was a major actor in Iroquoian cosmology and it was natural that it could be an important, if unwilling, participant in ceremonial activities (J. Wright n.d.). Some sites produce exceptionally high frequencies of dog remains, perhaps reflecting a time of heightened ceremonial-political activity, such as at the Cleveland and

Coleman Neutral sites (Lennox and Fitzgerald 1990:Table 13.3). It was particularly during Middleport times, however, that dog sacrifice and feasting increased in frequency although there is considerable variability by site and locality (Finlayson 1998:Table II.7.47). The importance of the ceremonial dog feast is reflected by the fact that dog remains are often as common as those of deer (Thomas 1998:Table 76). It is noteworthy that in House 10 at the Nodwell site, identified as a chief's house on the basis of its overall dimensions and wider bunklines and where community feasting could be anticipated, dog remains were more common than in the other houses in the village (Wright 1974). The use of the dog in ceremonial feasting does not necessarily indicate a lack of affection by their owners as is clearly indicated by the reaction of a Huron to the loss of his dog during a bear hunt - "Ah! it is true" (said he) "that I dearly loved *Ouatit*; I had resolved to keep him with me all his life; there was no dream that could have influenced me to make a feast of him, - I would not have given him for anything in the world;" (JR XIV:35). It is worth noting that most dog remains from the middens pertain to adults whereas the intact burials lacking evidence of violence at the Nodwell site all pertained to juveniles. In contrast, evidence of Odawa feasting on Manitoulin Island pertained to juveniles whose throats had been slit and the bodies consumed (Smith and Prevec 2000).

Less common are actual dog burials; a practice that is thousands of years old in Ontario. During the extensive excavations of the Draper site, for example, only a single dog burial in a house was identified (Finlayson 1985:280). The ritualistic burial of immature dogs was particularly common at the mid-14th century Nodwell site with six individuals being involved. In one instance, a pair of pups had been buried with a complete pot being placed on top of the bodies although another pair in the same house were not provided with an imperishable offering. In all instances, the dog burials at the Nodwell site were within houses as were two dog burials identified at the contact Period LeCaron site in Huronia (Johnston and Jackson 1980:Table 2). Burial of complete but disarticulated or partially disarticulated dog remains exhibiting butchering marks and burning have also been recorded (C. Ramsden 1989:Fig.13; Stewart 1991:28; Wright and Anderson 1969:13).

Other species of animals, or portions thereof, were also occasionally buried. At the Nodwell site a marten skull (*Martes americana*) with a hole cut through the frontal bone probably was part of a medicine bundle. From the same longhouse an immature groundhog (*Marmota monax*), an immature chipmunk (*Tamias striatus*), two immature passenger pigeons (*Ectopistes migratorius*), an immature black bear (*Ursus americanus*), and two immature beaver (*Castor canadensis*) were recorded (Stewart 1974:74-76). A clear emphasis upon immature animals likely reflect ceremonies concerned with regeneration and it is of particular interest that this concern was limited to a specific

BLACK AND WHITE PLATE XLVIII: A JUVENILE DOG BURIAL AND A POTTERY VESSEL PROVIDED AS AN OFFERING IN A PIT CONTAINING TWO JUVENILE DOGS The foregoing evidence of the ritualistic treatment of juvenile dogs all came from the Nodwell site (Reproduced from Wright 1976:Plate 6 and Wright 1974:Plate XVI, Fig.1) longhouse (Wright 1974:87-89). The timber rattlesnake (*Crotalus horridus*) from the Winking Bull site in the Niagara Escarpment area was undoubtedly of ceremonial significance (Finlayson 1998:Table II.7.50) as was an eastern fox snake (*Elaphe vulpina gloydi*) from the early historic Huron Molson site (Lennox 2000:139). In Iroquoian society snakes were not only regarded as malevolent powers but also as good luck charms. Articulated beaver remains have been recorded from the 17th century Tionnontaté site of MacMurchy (Ramsden 1977:277) while a juvenile black bear skull was placed upright and facing east in a longhouse storage pit at the Wiacek site (Robertson et al. 1995:49).

Certain archaeological features appear to have had a ceremonial function. Some of these are structures that have been interpreted as sweat lodges. As recorded by Father Gabriel Sagard for the early 17th century Huron (Wrong 1939:197-198) sweat baths, in addition to their social function, were an important means of staying healthy. It should be noted that the Iroquois concept of good health included good luck and mental contentment (Shimony 1961:261) and, thus, the major function of the sweat lodges would have been spiritual as well curative. Such features can occur as both circles of small posts or distinctive forms of pits, usually within the confines of the longhouse (MacDonald 1988). The pit structures have an excavated entrance way from inside the house into the external pit proper (Lennox and Fitzgerald 1990;Fig.13.33). Such pit features tend to be rectanguloid to ovate shaped in outline, always with a shallower entranceway at one end thus the frequent designation as "turtle pits". At the Day site, a Neutral cabin site, two such pits occurred on either side of the house with their entranceways or heads extending into the dwelling (Dodd and Riddell 1995:Fig.3; Lennox 1993:Fig.1). This particular dwelling likely was intended for ceremonial functions. It was represented by a 16.5 by 8.0 m longhouse which contained an abundance of pipe fragments but juvenile ceramics were totally absent, the latter suggesting the absence of women and children. While some of these features, particularly those with posts around the periphery, likely were sweat lodges others could have functioned as winter squash storage pits where access from the house to the squash during the winter would have been of obvious advantage. The other form of sweat lodge were the circular arrangement of small posts within the longhouse, with or without a central hearth. Such features were particularly common and well demarcated at the Draper site (Finlayson 1985).

Other archaeological features were undoubtedly of symbolic significance. An infant who had died at birth at the late 16th century Huron Benson site was provided with a bone awl, a potsherd, and articulated marten paws, the latter possibly the remains of a medicine bundle. It is speculated that the items relate to practices associated with child birth, such as, relative to the awl, the piercing of ears (Ramsden and Saunders 1986). An unusual feature was a cache of deer upper limb bones (humeri) at the Uren site (M.

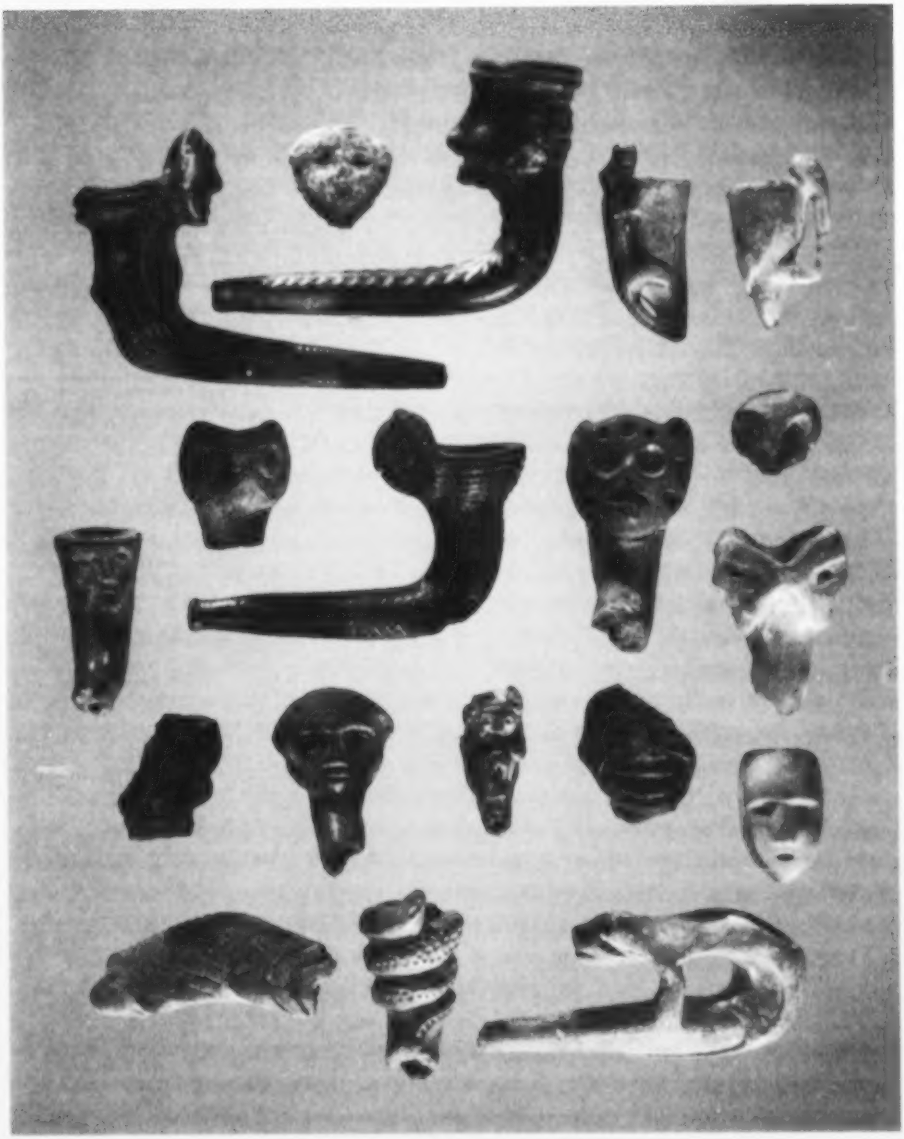
Wright 1986 and personal communication) which were set vertically in a pit in pairs from the same animals, all with burnt and punched perforations at the proximal ends. What is striking is that a very similar cache was excavated at the St.Lawrence Iroquois McKeown site (Pendergast 1988). Some differences existed between the two caches, such as the McKeown cache consisting of a mix of mature and juvenile deer which were layed out horizontally in the pit and not vertically, as well as some minor variations in the details of the perforations at the proximal ends of the humeri. Of significance is the fact that the Uren cache pertains to a late 13th century Ontario Iroquois culture occupation west of the Niagara Escarpment while the McKeown one relates to an early 16th century St.Lawrence Iroquois village in the upper St.Lawrence River Valley. The substantial time, space, and culture spread between these distinctive features suggests some form of pan-Iroquoian ceremonialism related specifically to deer.

With few exceptions, such as Robert Hall (1977; 1997), serious consideration of the symbolic significance of artifacts has been largely ignored; probably on the misplaced grounds that such exercises are purely speculative and unscientific based as they are upon assumptions which cannot be empirically demonstrated. Fortunately, this attitude is changing as it is increasingly recognized that elements of probability pertain not only to archaeology but law, physics, biology, and all disciplines, for that matter. As an archaeological example, "...the decoration on pots is not merely doodling", "...such motifs have meaning(s)...", and that efforts to delve into such matters "...will be predicated in part on ethnographic information..." (Fox and Salzer 1999:242). Indeed, just such an examination of 14th and 15th century Ontario Iroquois pottery and pipe motifs relative to early 17th century Huron number symbolism has proven to be a fruitful area of investigation (J. Wright 1999). The latter study is the first serious effort to systematically relate the detailed historical documentation on the early 17th century Huron with the archaeologically recovered pottery and pipe motifs. In addition to insights regarding pre-European number symbolism was the discovery that the motif patterns on the pots and the pipes were significantly different. As pots were made by women and pipes by men such differences may reflect functional differences related to gender with the pots being associated with sustenance and the pipes with ceremonial activities such as seeking power or soliciting assistance from the supernatural.

As has been noted, smoking pipes are more appropriately considered under **Cosmology** rather than **Technology**. Early French documentation indicates that smoking was a ceremonial activity rather than a secular one. Botanists have traced the origins of the genus *Nicotiana* to South America (Goodspeed 1954) with the earliest direct evidence of its use in eastern North America appearing approximately 2,000 years ago (VonGernet 1995:68). Smoking was associated with shamanic communication and transformation. In this regard, the use of the highly narcotic tobacco species smoked by the Iroquoian people, *Nicotiana rustica,* should not be lumped with other horticultural products (VonGernet 1992:179). Hallucinogens were used as a means of freeing the human spirit in order to acquire power from the realm of the cosmos. There is "...no reason why the first cultigens should not have been intended to feed the spirit rather than the stomach" (Furst 1976:27). The fact that smoking pipes were one of the last elements of native material culture to disappear under European acculturative influences reinforces their association with fundamental belief systems (Mathews 1978:32). There is also abundant ethnographic evidence that smoking was gender specific in that it was only done by men (VonGernet 1995:71) indicating that women were not to communicate directly with the spirit world through the use of tobacco. This gender association is further apparent in the early documentation that men grew and tended the tobacco plots (Boucher 1664:101) while women were responsible for all of the other cultigens. Grave offerings of pipes are also invariably associated with adult males (Noble 1992:44). For example, at both the Erie site of Ripley and the Neutral Grimsby site all of the pipes were associated directly with adult males (Parker 1907:Summary of the record of the graves, 514-517; Kenyon 1982). At the latter site there was evidence for the existence of animistic beliefs in the form of pipes being broken prior to placement with the deceased. Ritualistic breakage of effigy pipes was identified at the Huron Robitaille site where fourteen pinch-face effigies pipes were recovered from the middens (Latta 1971:125-126). Probably related to the foregoing is the fact that while 50% of rim sherd fragments from the Keffer site represented fragments from single vessels, pipe fragment matches were exceedingly rare raising the question of where were the pipe fragments being disposed (Smith 1991:4).

Effigy pipes of both anthropomorphic and zoomorphic form appear as early as the late 12th century (Andreae et al. 1998) but do not become common until the 16th century and particularly so during the period of European contact. Efforts to associate the effigy pipes with clan eponyms has not be successful. For example, there is no Owl Clan but owl is the most common bird effigy and birds and humans are collectively by far and away the most common effigies. Some effigies may relate to lineage totems and some, like the pinched-face and blow-face forms, may pertain to curing societies (Noble 1979). It has also been speculated that animal effigies represent guardian spirits while the human effigies, which change dramatically with the introduction of European disease, could relate to shamanic activities (Mathews 1980). On the other hand, given the fact that effigy pipes do not become common until late and that some styles had a short life weakens any argument for their association with deeply rooted symbolic beliefs. This does not necessarily deny that the foregoing forms did not possess parallel meaning with the much more common non-effigy pipes. For example, during Middleport times many of the non-effigy pipes possessed five horizontal lines leading to the observation "...that tobacco, dogs, sweatbaths, and the number five all facilitated sorcerous communication either alone or in combination" (J. Wright 1999:155). It should be noted that, in this context, sorcery is referring to the art or practice of magic or enchantment and not necessarily witchcraft. Effigy pipes come in many forms. Of the zoomorphic pipes approximately 50% are birds with nearly half of these being representations of the owl. It is probably not fortuitous that Owl was a major founder to the Huron curing feasts (JR X:325). Bear, wolf/dog, lizard, and snake effigies were somewhat standardized while others, like deer, were never portrayed in a recognizable form with a single example of fish to the author's knowledge. It is apparent that the animals most important to sustenance, such as deer and fish, rarely or never were portrayed on the pipes. Anthropomorphic effigies are more common than the zoomorphic effigies. Multi-image human effigy pipes, including the Janus type with two faces looking in opposing directions, are rare but do occur throughout the Iroquoian area from the 15th century on in Ontario and as early as the 13th or 14th centuries in New York. They are believed to be related to an ancient pan-Iroquoian shaman order (Mathews 1981). Some Huron-Neutral-Seneca effigy pipes, referred to as rattle pipes, possess a hollowed interior with a loose ball inserted (Kapches 1980) thus combining in one object two important ritual elements, tobacco smoke and the rattle. Others pipes are unique, like the Lawson site specimen representing a sitting human figure with erect pointed ears that faces the smoker (Wintemberg 1939:Plate XVI:Figs.18 & 19). While examining this specimen, on a hunch I placed a lit cigarette in the pipe bowl, drew in smoke, and then, placing a finger over the bowl, blew into the stem and, lo and behold, smoke came out of a small hole representing the effigy's mouth. What was also unusual regarding this pipe was that it was small and somewhat crudely finished suggesting that it was either the product of a juvenile Michelangelo or that sophisticated modelling was not required for it to serve its intended purpose. Given the association of smoking with cosmic forces it should not be too surprising that considerable variability and innovation existed in pipe form and, presumably, symbolic significance.

Archaeological pictorial art of any form other than the effigy pipes was rare among the Ontario Iroquois. Pottery figurines, stone and pottery maskettes, and animal and human effigy bone hairpieces, commonly called combs, occur but are rare. Exceptional finds are occasionally made, like the image of seven people in a canoe burned into the carapace of a turtle shell rattle from the Middleport VanEden site (Finlayson 1998:Drawing III.3.30; see Figure 127). At the Savage site, involving a single longhouse and an associated midden (Murphy 1986), there were a minimum of three pottery figurines. Five pottery effigies were recovered from the Draper site with four having human faces and one possibly representative of a bear. One of the human faces was clearly a maskette and not a fragment broken off a figurine (Pearce 1985:Plate 5). Five human pottery effigies were recovered from the Pincombe 2 cabin site outside of London suggesting some kind of special function for the site (Pearce and Catsburg 1985:11-12, Plates 5 & 6). Stone maskettes have been found on both Neutral sites (Finlayson 1998:Drawing



COLOUR PLATE XXVI: IROQUOIAN EFFIGY PIPES This plate includes Ontario Iroquois, St.Lawrence Iroquois, and a probable Algonquian pipe. All these pipes illustrate the exceptional skill of the pipe manufacturer. The St.Lawrence Iroquois specimens are as follows: second row down, second last specimen on the right; third row down 2nd and 4th specimens; and 4th row down, first specimen on the left. The stork-like stone specimen in the upper row, far right, was found in Algonquian territory. Trade in pipes, however, was common and place of discovery does not necessarily relate to place of manufacture. As can be seen, human and owl effigies are most common. While considerable could be written regarding the individual pipes on this Plate, perhaps the following will suffice: the smiling countenance of a figure fashioned in clay, a St.Lawrence Iroquois specimen, belies an English art historian who suggested that native Americans lacked a sense of humour as indicated by their purely geometric art; and finally the contact period Neutral site stone pipe on the far right, the lower row, is an exceptionally fine pipe which likely represents the Great Water Panther, a powerful underwater supernatural capable of providing humans with curative medicines. This particular pipe was stolen on consignment from a museum exhibit and has never been recovered despite the best efforts of Interpol. (Reproduced from Wright 1972b, Colour Plate IV. Scale variable).

III.5.15; Ellis and Ferris 1990:cover illustration) and ancestral Huron-Tionnontaté sites (Figure 126). Such maskettes could be elements of the False Face Curing Society which was widespread in Iroquoia including the Huron (JR XIII:263). The False Face Society plays a fundamental role in the Iroquoian cosmological belief system (Fenton 1987). A mid-14th century occurrence at the Nodwell site provides a possible indication of time depth for such societies. Curing societies, like the False Face Society, were integrative bodies which cross-cut clans. Maskettes were sometimes attached to the wooden false face worn by the dancers during the curing ceremony (Mathews 1978:133-134) and frequently have a mouth shaped in either a blowing or sucking form; blowing and sucking being both magical methods for removing sickness-causing foreign objects from the body of the patient.

Some other categories of artifacts are believed to have cosmological significance and are treated collectively in this paragraph. Long bone tubes, referred to as sucking tubes as they are believed to have functioned in curing ceremonies where the illness is sucked out of the patient, while not common, are widely distributed in both time and space. An unusual specimen from the Middleport Alderson Farm West site had three annular rings engraved at both ends and in the middle of the tube (Finlayson 1998:Drawing III.4.16, 1279; see Figure 127). Among the Huron the number three symbolized balance (J.Wright 1999:94-106) and would have been a most appropriate number to engrave on an instrument intended to cure. Further, the combined rings total the number nine which pertained "...to situations in which a large number of people faced a potential imbalance in their lives..." (Ibid:119). Research into the symbolic significance of motifs on pots, pipes, and other artifacts has just begun with the foregoing innovative study; a study which attempts to systematically integrate documentary information with archaeological material culture. Rattles made from turtle shell, such as from the Uren site (Wintemberg 1928:38), undoubtedly functioned as ceremonial instruments as they still do in the False Face curing society. Certain materials, like shell, crystal, and copper, have been associated with the metaphysical aspects of light and, thus, were regarded as having special powers (Hamell 1983:28). Copper, both native and European, for example, has been symbolically associated with the Great Water Panther, a powerful supernatural being believed in by both Iroquoian and Algonquian peoples and who could transmit curative knowledge to certain humans (Fox 1991). Pre-European curio collecting of earlier archaeological and palaeontological specimens, as well as any curiously shaped natural object, have been recorded and were likely regarded as charms with certain powers (Poulton 1985:26-28; VonGernet 1982:169; Wright 1974:99). This would accord well with the comment relative to the Huron that "...most things that seem at all unnatural or extraordinary to our Hurons are easily accepted in their minds as *Oky* - that is, things that have supernatural virtue" (JR XXXIII:211). A particular cultural value placed on the colour red was apparent at the Neutral Grimsby site where the blue glass surfaces of European beads were ground away to expose an inner layer of red coloured glass (Kenyon 1982:226).

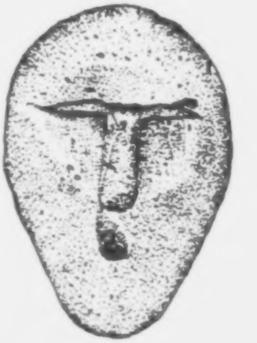
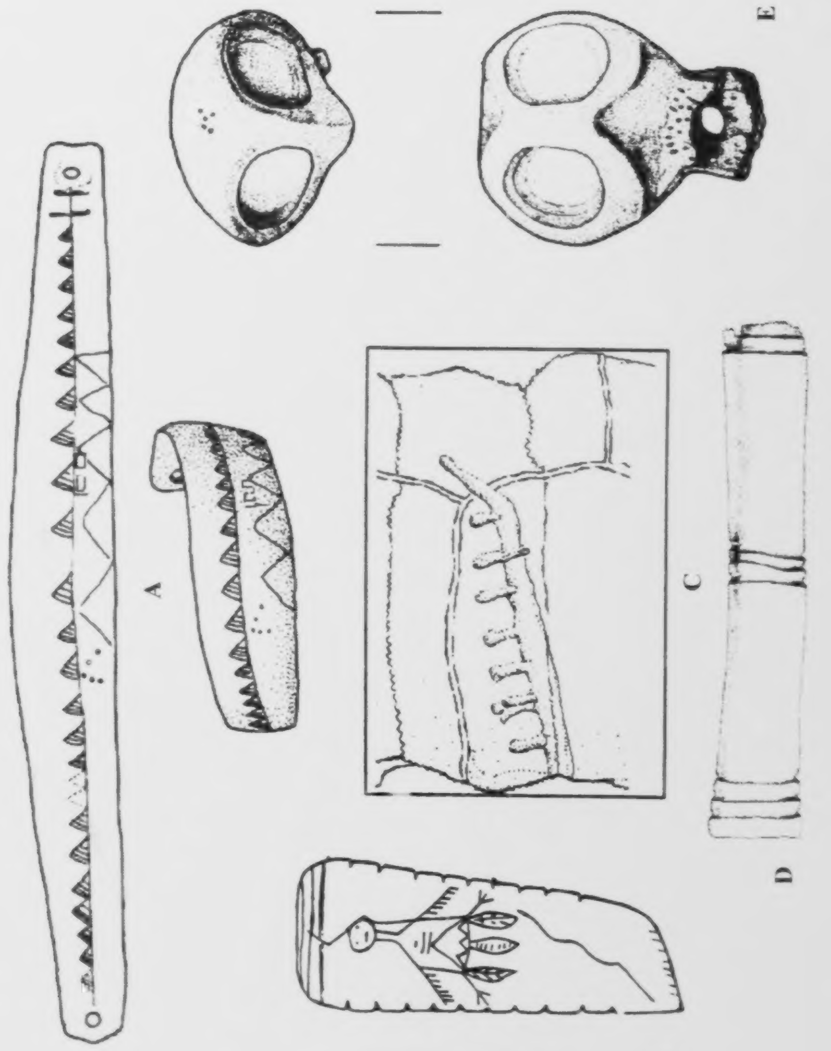


FIGURE 126: STONE MASKETTE FROM THE NODWELL SITE Only one maskette was discovered during the near total excavation of the Nodwell village. It may not be coincidental that the maskette came from a pit in House 8, the same house which produced burials of a number of immature animals, such as passenger pigeon, beaver, and bear. (Reproduced from Wright 1974:Cover; Drawing by Mr. David W. Laverie)

Evidence of prisoner sacrifice, including artifacts manufactured from human bone, is more appropriately considered in this section than **External relationships**. Remains suggestive of prisoner sacrifice are both sporadic and late, being particularly common during the 16th and 17th centuries. Even at sites where there is little or no evidence of prisoner sacrifice occasional occurrences in pits of human foot and finger bones (Stewart 1974) could be indicative of past hostilities; particularly with reference to fingers which where frequently cut from a captive's hand and would likely have been retained as trophies. At the 16th century Parsons site in Toronto a number of adult finger bones are reported, including two complete fingers from the same hand (Robertson et al. 1998:31). In addition, a human frontal bone chipped into a disc and two skulls set upright in a natural depression beneath a midden likely relate to human sacrifice. At the Winking Bull site in the Niagara Escarpment one finger bone was modified by grinding and drilling (Esler 1998:170). Less ambiguous is the evidence of prisoner sacrifice from the 16th century Lawson site in

London. More than five hundred human bones, mainly adult, were found scattered across the site with the majority consisting of skull and limb bone fragments and bearing evidence of boiling, scorching, cut and breaking marks, and dog gnawing (Wintemberg 1939:58). The state of such remains and their occurrences in the middens mitigates against them simply being the overlooked remains of relatives who had been removed from temporary graves for final burial in the ossuary. In addition, at the same site there were a number of human parietal skull bones formed into discs for rattles and cups, all being adult except for one child, as well as modified human limb bones (Ibid:36-37). Pottery vessels pertaining to the Western Basin culture of the Lake St.Clair region were common on the Lawson site and would indicate the presence of captive women whereas the scattered human remains likely related to Western Basin male captives. In the Neutral 17th century Grimsby site cemetery a number of instances of articulated female bodies lacking hands were recorded (Kenyon 1982:147). Human skull discs with perforations around their margins, frequently referred to as gorgets, actually were the two parts of a rattle. At the St.Lawrence Iroquois McKeown site, two such discs were actually found in a pit in their original form of a rattle. Such war trophies manufactured from enemy remains are not uncommon on16th and 17th century sites (M. Wright 1981) but also appear to have some time depth. Human skull rattles and/or pendants, for example, have been reported from the 12th century Pillar Point site at the east end of Lake Ontario in New York State (Ritchie 1944:86).

Witchcraft was greatly feared by all Iroquoian people (Shimony 1961) and considerable pertinent information has been recorded for the early 17th century Huron (Tooker 1991:117-120). Occasionally archaeological evidence can be used to cast light on the practice of witchcraft. For example, the French observed that the Huron burned the remains of an executed witch and cremation burials have been recorded from a number of ossuaries such as the late 13th century Tabor Hill ossuaries (Churcher and Kenyon 1960) and the Fairty ossuary (personal observation). The situation with the Uxbridge Ossuary (Pfeiffer 1986) is different from the preceding individual cremations in that the cremated remains of thirty-two individuals, of both sexes and a wide range of ages including six immature individuals, had been deposited on the floor of the ossuary pit. If these cremated remains related to witchcraft rather than some other phenomena then it was indeed on a massive scale, like an entire lineage. The Uxbridge Ossuary situation, however, is the exception to the rule and if the generally rare cremations are indeed evidence of the remains of accused and executed witches then it is apparent that being executed as a witch did not exclude the remains from being buried with those of relatives and other members of the community. Another possible bit of archaeological evidence relating to witchcraft is the practice of people secreting extracted diseased teeth. The use of a victim's body part, such as a nail paring, a hair, and presumably a tooth, in order to conjure a hex is a widespread phenomenon. Diseased adult teeth have been recovered mainly from longhouse pits but also from middens on Ontario Iroquois and St.Lawrence Iroquois sites (Esler 1998; Lennox et al. 1986:113; Wintemberg 1928:49;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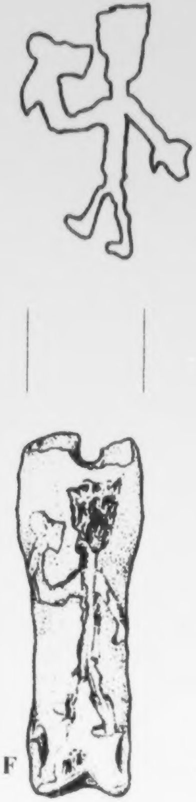

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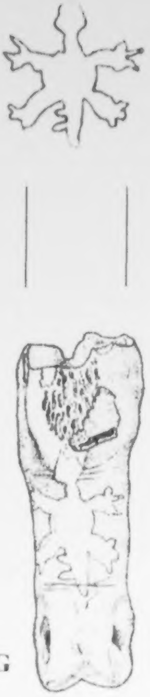

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FIGURE 127: BONE AND STONE OBJECTS WITH ETCHINGS OF COSMOLOGICAL SIGNIFICANCE The following objects are illustrated: item 'A' is two views of a decorated arm band from a Uren substage site; item 'B' illustrates Thunderbird etchings on stone pipes from different sites; item 'C' is a burned-in image of men in a canoe on a turtle carapace fragment from a Middleport substage site; 'D' is an incised sucking tube from another Middleport site; 'E' is two views of a bone owl effigy from a contact period Neutral site; 'F' is a etched image of a person wearing some form of headdress; and, finally, 'G' is an image on a turtle. All of the items except the stone pipes and the turtle etched on a deer toe bone are from Ontario Iroquois sites in the Niagara Escarpment region spanning the late 13th century to the European contact period. Regarding cosmological associations, the incised lines within the triangular motif on arm band 'A' occur consistently in three's. In Huron number symbolism 'three' signified balance in terms of both maintaining balance or restoring it (J. Wright 1999:94-106). The two stone pipes with Thunderbird etchings 'B' are so similar they could have been made by the same artisan even if they came from different sites. It noted that, once again, the number 'three' appears around the mouth of the pipes, at the heartline on the chests, as the triangles at the base of the body, and in the three feathers. Statistically, hardly a random distribution! Iroquoian Thunderbirds had human attributes and thus the humanoid faces. The etched image on a turtle shell of people in a canoe 'C' is more problematical but a cosmological association is inferred from the fact that Iroquoian people, among others, believed the World rested on the back of a Turtle who was also a supernatural being who played a fundamental role in the creation of the World. Bone sucking tubes, such as 'D' were used by medicine men to remove illness-causing objects from patients. Regarding this particular sucking tube it is probably not fortuitous that the terminal and medial patterns of grooving also occur in three's, the Huron number symbol for balance which included the balance involved in restoring health. Further, the combination of three three's equalling nine represented a number signifying balance magnified (J. Wright 1999:117-119). Regarding the owl head pendant 'E', in Huron mythology the Owl was responsible, along with the

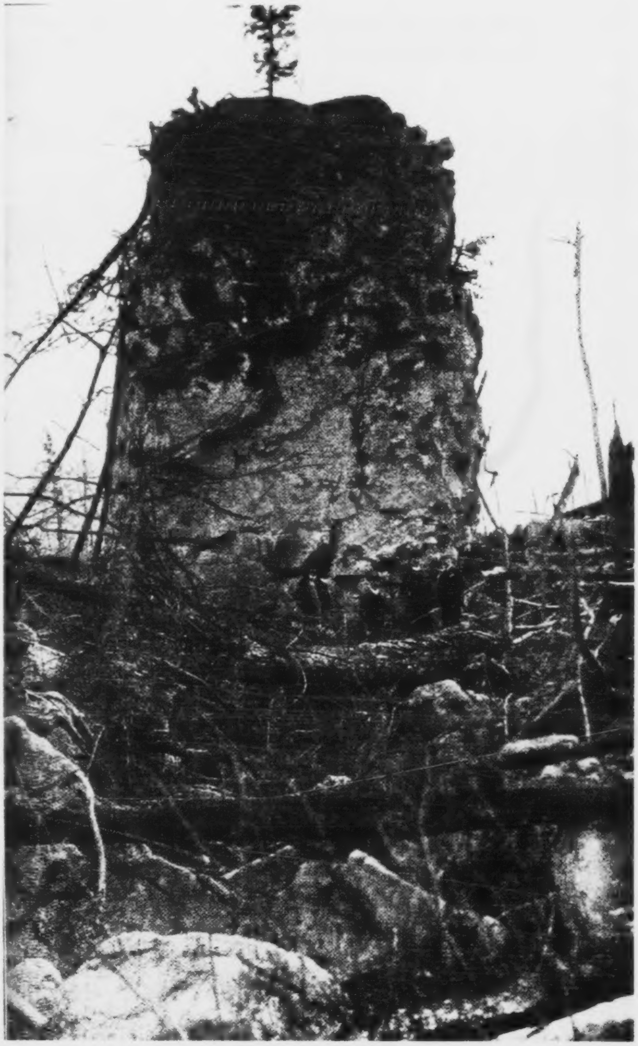
Wolves, for the origin of a major curing feast (Tooker 1991:102), a curative association which may explain why of the bird effigy smoking pipe images of Owl predominate. The man burned into a deer toe bone 'F' is truly unique and the significance of the image has been lost with time. An etched turtle on another deer toe bone is from a 16th century Huron site and may relate to Turtle as a powerful supernatural being.

(Regarding acknowledgements, the composite includes, in order of appearance, the following: (A) Drawing III.3.7 from Finlayson 1998; (B) from Wintemberg 1928a. Figs.4 & 5; (C) drawings III.3.30, (D) III.4.16, (E) III.5.28 all from Finlayson 1998 with permission; (F & G) both provided by Dr. William D. Finlayson with all drawings done by Rita Granda of Toronto) (Scale:variable)

Wright and Wright 1993:6) and their contexts are inferred to reflect a need to secret body parts from the malicious eyes of potential enemies with the capability of casting a hex.

A final category of cosmology is what could be called sacred sites. There were undoubtedly once a multitude of sacred sites but only a handful of these can be tentatively identified by archaeology. To the west of Huronia, for example, along the Huron path to the Village of the Dead, stands an impressive rock erosional remnant called *ecaregniondi* onto which were painted symbols (JR X:145) and which has been identified by scholars (Jones 1909:249).

The placement of three pre-13th century Pickering complex ossuaries approximately 60 m to the north of the east end of the Period IV Serpent Mound at the Serpent Mounds site (Johnston 1968:Fig.8) reflects the sanctity of an ancient burial area through time. As there is evidence for cultural continuity from the Point Peninsula complex of Period IV into the following Pickering complex of Period V it is reasonable that people would wish to bury their dead close to the remains of their ancestors. A quite different category of sacred site is the underwater Red Horse Portage site on Charleston Lake at the headwaters of the Gananoque River which empties into the St.Lawrence River. As much of the pottery recovered from two ledges at depths of nine and eighteen metres below the surface pertained to Period IV the site and its significance was considered in Volume II of that work (Wright1999:683-685). The presence of some Ontario Iroquois pottery points to the continued use of this sacred site. Such pottery vessels are speculated to represent the offerings of supplicants seeking the assistance of an underwater Grandfather Long-Tail who, according to both Iroquoian and Algonquian tradition, sought such watery depths as a protection from their mortal enemies the Thunderbirds. Grandfather Long-Tail or Panther could provide curative powers to successful supplicants and it is speculated that the pottery vessels represent offerings from said supplicants. Other underwater



BLACK AND WHITE PLATE XLIX: ECAREGNIONDI OR THE STANDING ROCK Situated along the Huron path to the Village of the Dead, this striking erosional pillar according to the Jesuits was once painted with images which, regrettably are not observable today. An worthwhile research project would be to apply the newly developed cross-polarization enhancement photographic procedure to see if the paintings referred to by the Jesuits (JR X:145) are still discernable using this innovative method. It is recorded that pigments were mixed with sunflower oil, bear fat, or the fat of other animals (JRXXXVIII:251) which would possibly aid in the absorption of the paint in the semi-permeable limestone. Whoever may take on this task would require considerable photographic expertise as well as some financial backing. If such a research proposal proved successful it would provide researchers for the first time a glimpse of Ontario Iroquoian rock painting iconography and open up a whole new field of research. (Reproduced from Jones 1908:249. Note figures at the right for scale).

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sites in the area are characterized by masses of butchered deer bone and pottery vessels and were probably related to taboos associated with deer pound hunting (PhillipWright1980; 1982; and personal communication).

A facet of past culture for which we have pathetically limited data but was of paramount importance to native people is shamanism with its varying means of curing the sick. Shamanism existed across the Western Hemisphere and was World wide until the logical propensity of Western scholarship discarded spiritualism as having any role to play in curing people and attributed every curative power to scientific biological and chemical evidence. Both spiritual and "home remedies" for ailments, however, still persist in our society and are increasingly being awarded some degree of acceptance by the medical profession. For native people the shaman was both a priest and a doctor. Plant-based medicine and ceremonial acts were inseparable elements of the curing ceremony. A cure could not be realized without the balanced relationships between medicine and ceremony. Shamans were individuals with exceptional orenda or power who could detach their soul from the body and travel into a supernatural world to attain knowledge necessary to cure an individual or change a situation. To achieve this transformation hallucinogens were used which would put the shaman in a trance like state. Among the Iroquoian people, including the Huron, the substance used to assist the release of the soul from the shaman's body was tobacco and specifically *Nicotiana rustica,* a native species of tobacco with four times the amount of nicotine as the commercial tabacco, *Nicotiana tabacum*. For a succinct outline of Huron shamanism see Tooker (1991:91-114). Archaeology is naturally mute regarding most aspects of shamanism and the associated ceremonies. Undoubtedly, the Jesuits among the Huron had limited knowledge of shamanism as the former were regarded as the competition and most of the curing rites and the medicines associated with it would have been kept secret from the priests. It is worthy to note, however, that Samuel de Chaplain once observed that he would rather be treated for an ailment by a Huron medicine man than a French doctor. Studies of still intact shamanic practices, such as in the Amazon rain forest, reveal the great store of medicinal knowledge in the heads of shamans, and allowing for the far greater botanical diversity in the rain forest, probably reflect aspects of culture which were once ingrained in Iroquoian and other native peoples cultures. With reference to the Amazon, it has been observed that every time a shaman dies that it is equivalent to a library burning to the ground (Plotkin 1993). Some quotations from the foregoing outstanding ethnobotanical publication are appropriate in this context given the not only once omnipresence of shamanism but also the number of core traits common to all such as transformation to permit the soul into the supernatural world for information, the use of plant remedies in conjunction with ceremonial acts of sacred chants, laying on of hands, dancing, etc. Plotkin layed low by a serious ear infection while in the jungle recorded the shaman's healing process as follows: "Then I sensed someone standing above me, but I couldn't make out his face. The nameless shape spoke in a language I could not understand and then bent over and looked deep into my eyes. A familiar yet frightening face loomed out of the inky blackness: the Jaguar Shaman. I tried to concentrate on his movements. He threw branches and leaves into the fire and a thick, aromatic smoke filled the hut. He loomed in front of me once more and from the waistband of his breechcloth he pulled a short yellow bamboo container whose yellow top was made from the bladder of a paca, a large, tasty, tailless rat. Twisting off the cover, the Jaguar Shaman knocked the contents - several pieces of white fungus - into his open palm. Turning my head to the side, he squeezed the sap from the fungus first into one ear and then the other. Finally, he began chanting a slow and soft mournful dirge and washed me with a warm solution; he gave me a tea to drink, and I fell asleep." (Plotkin 1993:140-141). The foregoing treatment resulted in a rapid cure. With reference to the components of the poison curare and their effects he was compelled to observe that "Once again, indigenous people in red breechcloths, living deep in the Amazon, had proven to be our equals - actually our betters - in organic chemistry" (Ibid: 156). Further, "While shamans invoke spirits and use sacred rituals to treat their patients, the process is not entirely magical. In addition to their broad and detailed knowledge of the healing properties of the local flora, shamans also employ such practices as relaxation and massage, hypnosis, visualization, and dietary prescriptions to treat their patients" (Ibid:203). There are many other quotable quotes in this marvellous scholarly piece of work and I strongly recommend it for those interested in shamanism, other cultures, ethnobotany, and just a "good read".

There has been some criticism of attempts to read symbolic meaning into the archaeological record on the grounds that such exercises can never be objective due to our inability to filter-out our own cultural biases when examining other cultures. An example of this hyper positivist attitude is apparent in the comment "...to remind anthropological scientists that a member of a culture cannot operate outside that culture: that science is not privileged and its method does not stand above culture" (Leone and Palkovich 1985:428). While acknowledging the difficulties of thinking outside of one's own culture the issue is not a simple black or white one. There are demonstrable elements of uniformitarianism or shared cultural traits in human culture, with varying shades of grey relative to cross-cultural comprehension. Rather than the foregoing statement, I prefer the observation that "...we cannot really interpret prehistory without making a conscious attempt to understand the nature of humans as symbol-using social animals effectively involved in a perceived world that they have helped to create" (Hall 1977:515).

External relationships:

The 16th century shift of the Southern Division Huron villages away from Lake Ontario and into Huronia and the amalgamation of small villages to form larger ones have been attributed to indirect European influences associated with trade (Ramsde 1978). However, in lieu of any direct evidence of European influences on mid-16th century sites indigenous native events are most likely the causal factor behind such population movements (Warrick 1984). Indeed, there were a whole series of major tribal movements during the 16th century; all away from the Five Nations Iroquois League who, in contrast, did not move from their ancestral homelands. These large scale movements involved the following: the St.Lawrence Iroquois shift out of New York State into adjacent eastern Ontario and to some extent Québec; the contraction of the westernmost Neutral villages to east of the Grand River and their abandonment of villages on the east side of the Niagara River; the southward contraction of the Erie out of the Buffalo area of New York in the Niagara Frontier; and, finally, the Susquehannock move down the Susquehanna River from its headwaters in New York State to the Chesapeake Bay area. The Wenro, a small tribe apparently related to the Neutral, was forced to abandon their lands between the Neutral Confederacy and the Seneca when the former refused them entry into their Confederacy. Their wholesale adoption by the Huron was recorded by the French. There is a precedent for the documented Huron invitation for the Wenro to join them in Huronia. At the 16th century Seed-Barker Huron site north of Toronto the abundance of Neutral style pottery as well as longhouses with the distinctive Neutral slash-pit partitioning feature (Williamson et al. 1998:9) would suggest a peaceful merger of communities rather than being a product of conquest and absorption. The nearby McKenzie site, with its abundance of Onondaga chert from Neutralia, Western Basin and Neutral pottery styles (Johnson 1980), also suggests close relationships between certain Huron and Neutral villages. Certainly there is evidence of close proximity between the Neutral and Huron villages in the Niagara Escarpment area (Finlayson 1998). Prior to these 16th and early 17th century events was the late 13th century conquest of the Glen Meyer complex by the Pickering complex (Wright 1966; 1992). This conquest proposal has received considerable support from archaeological research in the Niagara Escarpment area (Finlayson 1998). As will be discussed subsequently in the section on **Inferences on society,** the majority, if not all, of these tribal movements and replacements are best explained as strategic reactions to the formation of a number of formidable confederacies beginning as early as the 13th century but reaching a climax in the 16th century. The fact that the Iroquoian neighbours of the Five Nations (Mohawk-Oneida-Onondaga-Cayuga-Seneca) felt compelled to establish deeper buffer zones between themselves and the aforementioned confederacy likely relates to the beginnings of the formation of the Iroquois League sometime in the mid-15th century. Unlike the Huron and Neutral confederacies, which were composed of culturally related tribes who spoke the same language, the Iroquois League was composed of at least three distinctly different tribal clusters, the Mohawk-Oneida, the Onondaga, and the Seneca-Cayuga suggestive of a more sophisticated level of inter-tribal organization than the confederacies of their neighbours.

Archaeological evidence bearing on external relationships falls into a number of categories: cultural replacement; evidence of conflict derived from burial evidence, human sacrifice, war trophies, and cannibalism; the presence of alien pottery on sites indicative of the presence of captive women in lieu of other evidence of a totally incorporated alien technology; and occurrences of exotic trade items.

The most dramatic incidence of cultural replacement occurred in the late 13th century when elements of the Pickering complex east of the Niagara Escarpment conquered their Glen Meyer neighbours to the west of the Escarpment. It would appear that some of the Pickering villages were the first to achieve a level of political sophistication capable of forming a confederacy for military purposes rather than simply mutual non-aggression pacts (Wright 1992). If their Glen Meyer neighbours had attempted to defend themselves as single villages they would simply have been no match for the combined military force of a number of Pickering villages. Glen Meyer complex sites disappear and in their place appear descendant Pickering villages referred to as Uren and later Middleport. Glen Meyer pottery styles and some other items appear on the western Uren sites and are interpreted as evidence of the typical Iroquoian practice of adopting enemy women and children. Contemporary Uren period sites continued to occupy the traditional Pickering homeland east of the Escarpment as far as the Toronto region. This westward expansion also extended into adjacent New York State in the Niagara Frontier region. There is archaeological evidence from adjacent Michigan and Ohio that Glen Meyer refugees fleeing their homeland took up residence with people of the Western Basin culture. An expanding body of evidence (Finlayson 1998:259-261; Woodley 1993) suggests that the Glen Meyer people were actually Algonquians and not Iroquoians and, therefore, their merging with the Central Algonquian tribes of the Lake St.Clair region is understandable. Under the circumstances, the Glen Meyer complex will be discussed in detail in the following chapter on Western Basin culture, including the issue of their ethnicity.

Another major population movement was the intrusion of the St.Lawrence Iroquois from the east end of Lake Ontario and south of the St.Lawrence River in New York State into eastern Ontario and southern Québec in the 15th to early 16th century. Earlier penetrations are evidenced by the mid-14th Lanoraie village in the Trois-Rivières area of Québec. Many Québec archaeologists, however, would argue that the St.Lawerence Iroquois developed in place in the St.Lawrence Valley out of an assemblage called the Melochville complex and its descendants (Gates St-Pierre 1999; Morin 2001). The lands occupied in eastern Ontario were devoid of previous Ontario Iroquois villages although such villages occurred 100 km to the west along the north shore of Lake Ontario with seasonal fish camps less than 80 km away. These latter villages pertained to one of the tribes of the Southern Division Huron. It is speculated that the St.Lawrence Iroquois intrusion into the area initiated hostilities with the neighbouring Huron which lasted for over 100 years and terminated with the destruction of at least the western-most St.Lawrence Iroquois villages late in the 16th century. While it is probable that the St.Lawrence Iroquois abandonment of their homelands in New York was initiated by some push from the ancestors of the Onondaga and Oneida, who along with the Mohawk represented the initial components of the Iroquois League confederacy, the new settlements still would have been vulnerable to attack by the aforementioned tribes located only a short distance to the south with ready river and lake water routes into the St.Lawrence River. Instead, the major defensive concern of the western St.Lawrence Iroquois villages was obviously directed towards the Southern Division Huron tribes of the lower Trent River and north shore of Lake Ontario. This event was considered in detail in Chapter 32 and will not be repeated here other than to briefly note some of the reciprocal impacts of this prolonged conflict between the western St.Lawrence Iroquois and the Southern Division Huron. Such evidence consists of the following: the amalgamation of smaller villages into extremely large, heavily defended frontier villages like Draper (Finlayson 1985) and Parsons (Williamson and Robertson 1998), on one hand, and the St.Lawrence Iroquois McKeown and McIvor sites on the other; human bone trophies and evidence of human sacrifice and cannibalism; and an abundance of St.Lawrence Iroquois pottery indicative of female captives but a corresponding absence of male produced smoking pipes with a similar occurrence of Huron pottery on contemporary St.Lawrence Iroquois sites. At the early 16th century Southern Huron Division Draper site, for example, nearly 500 St.Lawrence Iroquois style pottery vessel fragments were recovered (Dr. James F. Pendergast: personal communication) while at the contemporary Parsons site nearly 10% of the recovered pottery vessels were classified as being St.Lawrence Iroquois types (Williamson and Powis 1998:59). In contrast, St.Lawrence Iroquois smoking pipe styles are either absent or extremely rare. Only two of the 4,203 pottery pipes from the Draper site can be attributed to St.Lawrence Iroquois culture (VonGernet 1982:264-265) but twenty-five discoidal pottery beads, a St.Lawrence Iroquois cultural diagnostic likely associated with women, were recovered (Pearce 1985; Pendergast 1981). Pottery vessels are regarded as a product of female manufacture while pipe production is attributed to males. At the Keffer site three of the culturally distinctive St.Lawrence Iroquois deer scapulae pipes were found as well as some similarly diagnostic soapstone beads (Finlayson et al. 1987:20-21) suggesting a somewhat different relationship with the St.Lawrence Iroquois and this particular 16th century Huron village. Also present were some Mohawk-Oneida pottery styles (Smith 1991:19). Of interest was the fact that the majority of the St.Lawrence Iroquois pottery from the 16th century Kirche village on the upper Trent River occurred outside of the palisaded section of the village (C. Ramsden 1989:69). A somewhat similar situation occurred at the Parsons site where the majority of the St.Lawrence Iroquois pottery came from two longhouses (Williamson and Powis 1998). At the Coulter village site on the upper Trent River there was even some evidence of pottery motif blending of Huron and St.Lawrence Iroquois decorative styles (Damkjar 1990:Figs. 15 & 21). Significant influxes of St.Lawrence Iroquois pottery on Southern Division Huron sites began around AD 1450 and carried through to AD 1550 with reciprocal quantities of Huron pottery appearing on the contemporary western-most St.Lawrence Iroquois villages.

Another instance of ancient conflict associated with population movements was that between *some* of the tribes of the Neutral Confederacy and the Fire Nation of the

Lake St.Clair region at the junction of Ontario, Michigan, and Ohio. The Huron, Neutral, and Tionnontaté used the general term "Fire Nation" for all of the tribes in southern Michigan (Clifton 1978:742). On the basis of the recently discovered 1641 map of Novvelle France the Fire Nation could have included not only the Mascouten but the Kickapoos, Potawatami and possibly the Fox and Sauk (Steckley 1990); all speakers of Central Algonquian languages (Goddard 1978a). The conflict between elements of the Neutral and the Fire Nation bears an uncanny resemblance to that between the tribes of the western St.Lawrence Iroquois and the Southern Division Huron. If, as proposed here, the Glen Meyer complex people were Algonquians related to the Western Basin culture and not Iroquoian people then a conflict initiated by the conquest of Ontario west of the Niagara Escarpment in the late 13th century was still ongoing in the mid-17th century. There is evidence of the distinctive Western Basin culture pottery on 16th century villages sites like the Lawson site in London (Wintemberg 1939) and, in particular, the western-most Neutral frontier villages of Wolfe Creek and McGeachy (Foster 1990) where 36% and 50%, respectively, of the pottery was in Western Basin culture styles; a not too surprising occurrence given that the Western Basin culture Weiser village site was only located 31 km to the northwest. Foster's report specifically addressed the issue of the relationship between the Neutral and the Western Basin populations. The occurrences of Western Basin pottery on Neutral village sites begins in the late 15th century and culminates dramatically on the sites of a *specific* cluster of Neutral villages north of Hamilton (Lennox and Fitzgerald 1990:418-419). It is apparent from this evidence that the Neutral Confederacy did not function as a united military force as only the northern tribe(s) were involved in the conflict with the Western Basin villages. At both the large contact period Neutral Hamilton site and its satellite hamlet 2 km away the distinctive shell-tempered Western Basin pottery, like pottery from the Fire Nation village of Indian Hills in Toledo, Ohio (Stothers 1981), was particularly abundant (Lennox 1984:243) but very rare on the contemporary major Neutral Confederacy village of Walker (M. Wright 1981). Only a single shell tempered sherd was found in the Neutral Kelso locality in the Niagara Escarpment during the contact period (Finlayson 1998). The Fire Nation pottery becomes particularly common on some Neutral sites after AD 1615 (Fitzgerald 1982:Table 16) and its increasing presence correlates with French records of Fire Nation captives being brought back to Neutral villages involving 100 in 1640, 170+ in 1641, and 800 in 1643 (JR XXI:195; JR XXVII:25). The French also record that the Neutral were allied with the Odawa, a Georgian Bay Algonquian composite of bands, and the Tionnontaté in their conflict with the Fire Nation (Western Basin culture). A time gap in this conflict between the initial destruction of the Glen Meyer complex at the end of the 13th century and the evidence of Western Basin pottery on some Neutral sites going back to the late 15th century would appear to be bridged by sites like the Butler site in Detroit, Michigan where refuse pits contained predominantly Western Basin and Glen Meyer pottery types but also some Uren-Middleport pottery styles (Dr.

David M Stothers, University of Toledo, Ohio: personal information and documentation) suggestive of Ontario Iroquois female captives. The evidence of such reciprocal pottery products by war captives has been blurred by assuming that the sudden appearance of distinctive Uren and Middleport collared and push-pull horizontal motif pottery styles on Western Basin culture sites was related to internal stylistic change (Murphy and Ferris 1990:211,Fig.7.17) rather than through an introduction by captive Ontario Iroquois culture women. Pertinent to the foregoing is the fact that trace element analysis of the Western Basin pottery from the Lawson site indicated that the clay was not local and that the pots were likely brought to the site by captive women (Trigger et al. 1984).

An unresolved archaeological problem which has the potential to being settled by pottery styles involves the AD 1639 adoption of the Wenro tribe by the Attignawantan tribe of the Huron Confederacy. The Wenro, whose original homeland was believed to have been between the Seneca and the Neutral, were forced to emigrate to the Huron Bear Tribe village of Ossossané when the Neutral removed their protection. It has been suggested that the late contact period Edward site in Huronia, with its high incidence of Seneca-Cayuga pottery styles, might relate to a Wenro occupation (Ridley 1973). Unfortunately, no Wenro village site has been identified in their New York homeland (Dr. William Engelbrecht, Buffalo State University: personal communication) and, therefore, we are ignorant of whether their pottery stylistic tradition was most closely related to the Seneca/Cayuga or the Neutral. Seneca and Cayuga pottery styles have been identified on Erie sites, like the Kleis site south of Buffalo, New York (Engelbrecht 1984) but this could relate to captive women rather than the Wenro per se. As the situation stands, the high incidences of Seneca-Cayuga pottery on Huronia sites like Edwards and Orr Lake could relate to either female Seneca-Cayuga captives or Wenro influences or some combination of the two. If, on the other hand, the Wenro pottery tradition was essentially the same as the Neutral-Erie then it would be difficult to isolate this pottery from related Huron pottery styles.

In contrast to the foregoing population movements motivated by the threat of war, the Ontario Iroquois move into Huronia at the foot of Georgian Bay, beginning around the middle of the 13th century, did not appear to precipitate a conflict with the Algonquian people of the Georgian Bay area to judge from the lack of village defensive considerations by the immigrants (Channen and Clarke 1964; Lennox et al. 1986; O.A.S. 2000; Sutton 1995:77). Perhaps a mutually beneficial trade relationship and alliance between the Huron and their Algonquian neighbours, as noted by the French, and the fact that the Algonquians appear to have been only half hearted horticulturists thus reducing competition for arable land eliminated the need for hostilities.

Major population movements long preceded European influences and indicate the logistical capabilities of these communities to shift rapidly from one area to another, even well beyond the usual pattern of commuting from the old village until the new one under construction, along with field preparations, was ready for occupation. Some elements of the Huron and the Neutral and their ancestors also possessed the capability to form effective military ventures based upon confederacies consisting of a number of villages, with the goal of land acquisition and/or the total destruction of an enemy. There has been an erroneous tendency to attribute such large scale warfare to European influences. Particularly persistent has been the suggestion that the St.Lawrence Iroquois were destroyed by either the Huron or the Iroquois League in order to gain access to the European trade in the St.Lawrence River. As has been aptly stated regarded the preceding scenario, "There simply is no evidence to suggest that prior to the 1580's there was any kind of formalized trade with Europeans along any part of the St.Lawrence River waterway" (Ferris and Spence 1995:122). It has been further noted that the underlying purpose of the mid-17th century attacks on the Huron, Neutral, and Tionnontaté, Erie, and Susquehannocks by the League of the Iroquois was not economic (e.g. furs) but to consolidate all Iroquoian people under one confederacy and to recoup the horrendous population losses caused by introduced European diseases and warfare (Ferris and Spence 1995:124-1235; Heidenreich 1990:488-490). Neither can the increase in village amalgamations be attributed "to the emergence of large scale monopolistic trade concerning strategic goods..." (Hayden 1978:114) as the substantive basis for such a conclusion simply does not exist. In short, despite claims to the contrary (Ramsden 1990:383), there is no current basis for questioning the view that the earliest evidence of European contacts into Huronia was likely a product of indirect trade involving utilitarian objects like metal kettles and iron and does not appear until "...much before 1580 AD" (Noble 1971:42).

A recent bizarre suggestion of Mississippian cultural influence on the formation of Iroquoian society (Dincauze and Hasenstab 1989; Jamieson 1992) is without foundation in fact including accommodation of the respective temporal developments in the two societies. The so-called Mississippian cultural influences all post date their equivalents in Iroquoia. For example, there is evidence of maize being grown in Ontario by AD 500 (Crawford et al. 1997) rather than AD 1100 when the supposed Mississippian culture influences are suggested to be most pronounced. Also the majority of so-called Mississippian cultural traits, such as pottery decorated with horizontal push-pull executed motifs, stone and pottery discoidals, bone points , pins, beads, whistles, deer phalange cup-and-pin items, an early triangular arrowhead variety, and mass secondary burial (Jamieson 1992:72) are all present in Iroquoia prior to the establishment of Mississippian culture around AD 1000. Similarly, in lieu of other compelling evidence of Mississippian influence on Iroquoia the relatively rare *surviving* wall trenches around Ontario Iroquo longhouses cannot be accepted as evidence of influence from the southwest (Kapches 1980:104). In fact, given the heterogeneity of traits "...no single material or conceptual trait has proven to be a reliable index of Mississippian culture..." (Brown 1998:533).

While cultural replacement, where one culture replaces another without evidence of intervening cultural change which could account for a sudden internal cultural transformation is, as in the Pickering-Glen Meyer scenario, the clearest evidence of war and conquest. Other lines of archaeological evidence can be used to infer endemic warfare. The very fact that large villages were situated in defensible locales and surrounded by heavy defences, in itself, indicates that the communities' concern was not with a few enemy warriors skulking in the corn fields but rather with massive head-on attacks by armies. Interlocking village interior defensive strategies creating cul-du-sacs reinforce the importance being placed upon defence from *major* attacks which could breach the village outer defences. Early French documentation refers to Neutral armies of up to 2,000 warriors attacking the Fire Nation and the mainly Huron force which attacked an Iroquois League village in 1615, accompanied by Samuel de Champlain, is estimated to have numbered 500 (Trigger 1976:304). Such large scale military capabilities were not something the natives picked up from the European newcomers. There are still those, however, who will argue that pre-European large scale warfare never existed among Iroquoian peoples, despite the overwhelming archaeological and French documentary evidence, and insist that indigenous warfare was simply intended "...to kill or capture one or two people" (Ramsden 1990a:92) The common practice of two or more contemporary villages being situated within geographically mutually supportive range of one another was obviously a military strategy. Mutually supportive villages being situated close to one another would also tend to deter prolonged sieges by an enemy force which would have to be constantly looking over their shoulder for external counter attacks. Recent ploughing of sites would essentially destroy any evidence of villages destroyed by warfare and, regardless, such sites could not be differentiated effectively from villages destroyed by an accidental fire such as the Molson site in Huronia (Lennox 2000), a phenomenon which, according to the French, was relatively common. A more explicit line of evidence bearing on hostilities comes from burials. Evidence of human conflict has been identified across Canada extending back in time for thousands of years. It is suspected, however, that the small bands of hunters and gatherers could ill afford to lose hunters to warfare and that except in richly endowed natural areas like the West Coast the degree of mayhem was relatively minor. With cultigens establishing a stable food base for which women were basically responsible the men would have been increasingly freed for other activities including warfare. Historical documentation is quite explicit that men in Iroquoian societies mainly acquired prestige through warfare which subsequently elevated them to the level of elder statesmen (Fenton 1998). It would appear that endemic warfare got off to an early start among the Ontario Iroquois with an adult male from the 9th century Miller site having an arrowhead lodged in his back (Kenyon 1968; Ossenberg 1969:9). Not only was the Miller site palisaded but it was situated in close proximity to a number of related villages (Dr. William D. Finlayson, London Museum of Archaeology: personal communication). It thus appears that there was a need to establish village and village cluster settlement pattern defensive strategies at an early stage in the horticultural revolution. An exceptional and macabre situation was recorded at the AD 1400 Van Oordit site near Kitchener. Here a number of individual burials of dismembered bodies, not associated with a village, were identified; some with arrowheads stuck in their bones (Molto et al. 1986). Between nine to thirteen adult males appear to have been involved. One individual exhibiting evidence of torture had three arrows heads imbedded in his body. A chipped stone knife directly associated with a burial bore traces of human immunoglobin G and was likely used to dismember the individual (Ibid:53). Human blood residues were also found on a conical bone arrowhead in one of the bodies. There were incidences of severed limbs and decapitation with associated evidence of cut marks. It has been speculated that the bodies, all of which were young adult males, were those of an ambushed war party who, after torture and execution, were buried in order to "...immobilize or restrain the spirits of the dead" (Ibid:60). Evidence of warfare in the form of mutilated bodies and healed trauma have been recorded elsewhere (Esler 1998:160-161; Finlayson 1998:20, 337-338; Pfeiffer 1986:28). Cannibalism in the form of broken, burned, and boiled human bone discarded in the village middens, as well as war trophies made from human skulls and limb bones, was considered in the section on **Cosmology** as such evidence is best viewed as the product of ritual prisoner sacrifice.

Exotic items reflect external relationships with other people. Clearly the small fragment of presumably Norse metal alloy (Wright 1994) from the 12th century Boys site east of Toronto (Reid 1975) pertains to indirect trade coming from the Gulf of St.Lawrence. Exotic items among the Ontario Iroquois are generally items manufactured from Atlantic marine shell, Lake Superior copper, Upper Great Lakes catalinite, and cherts and, with the exception of the latter, only become common during Period V at the time of European contact. In fact, the relative paucity of recognizable exotic items among the Ontario Iroquois stands in contrast to both earlier exchange networks and the dramatic fluorescence of trade associated with the appearance of Europeans in eastern North America. Prior to the European factor marine shell beads and other ornaments occur but are quite limited in numbers (Kenyon 1968; Lennox and Fitzgerald 1990:429; Wintemberg 1928:35; 1939; Wright 1974:Plate XV,fig.12). It is during the late 16th and early 17th centuries that marine shell beads and ornaments become particularly common on Neutral, Huron, and Erie sites. These items are believed to have originated from the Chesapeake Bay area (Pendergast 1989) and their comparative scarcity on League Iroquois villages suggest the latter were being bypassed in the trade (Lennox and Fitzgerald 1990:431) via a circuitous route following the Susquehanna River and overland to the Allegheny River into southwestern New York State (Wallace 1953:map insert). Such trade would have involved a Susquehannock to Erie to Neutral to Huron sequence of contacts. This trade relationship is supported by the evidence that there were "...far more trade goods and personal inclusions in Neutral ossuaries than are found in those of the Huron" (Noble 1978:160) as the Neutral were closer to the source than the Huron. Certainly the Neutral Grimsby cemetery (Kenyon 1982:61-62) is a prime example of the abundance of marine shell ornaments during the early 17th century. It has been speculated that the Neutral neutrality with the League Iroquois was related to their key role in this eastern trade network (Noble 1978:160). At contact sites, like the Neutral villages of Christianson and Hamilton, there is also some evidence of marine shell wastage (Fitzgerald 1982:209-219; Lennox 1981:Table 41) suggestive of some trade in raw material with local manufacturing although other contact sites lack such evidence (M. Wright 1981:111). The majority of the marine shell ornaments have been recovered from graves.

As with the marine shell trade, Lake Superior native copper is poorly represented on Ontario Iroquois sites (Finlayson 1998; Kenyon 1968; Reid 1975:56; Robertson et al. 1998) except at a site like Nodwell situated in close proximity to the Odawa of Georgian Bay. In fact, the fashioned native copper sheet in the forms of bird and Great Water Panther effigies from the contact period Tionnontaté site of MacMurchy were very likely of Odawa manufacture (Fox et al. 1995). What native copper items are encountered generally consist of awls, beads, and, to a lesser extent, knives.

It has only been recently that concerted efforts have been made to trace exotic stone artifacts and flakes to their geological sources and, thus, knowledge of the trade in exotic stone is spotty. The majority of such associations also tend to be judgmental rather than being based upon petrographic and chemical analyses. Minor amounts of Kettle Point chert from the Sarnia area, cherts from the Balsam Lake and Collingwood areas, as well as Flint Ridge, Ohio chert, were all identified at the contact period Neutral Christianson site (Fitzgerald 1982:167). Manitoulin Island and Michigan cherts have been recovered from Tionnontaté sites (Fox 1980:94; 1992:52, Fig.1). The dominance of Onondaga chert on the Draper site (Poulton 1985:4) and other sites in the Toronto area indicate considerable westward trade with the Neutral of the Niagara Escarpment. Another stone material which was widely distributed, particularly during the European contact period, was red slate, sometimes called silt stone, from north of Mantoulin Island. This material would have been traded by the Algonquian Odawa to their allies, the Tionnontaté (Fox 1980). From the Tionnontaté, red stone beads and pendants were traded to the Neutral and Huron. Manufacturing debris suggests that the Tionnontaté actually manufactured the finished goods. Often this red stone is attributed to catalinite from Minnesota and South Dakota (Lennox and Fitzgerald 1990:435; Robertson et al. 1998:Fig 32a) but it is probable that many of these items are more local in origin.

Certain other miscellaneous pieces of evidence are also indicative of trade connections. Moose bones (*Alces alces*) from the Nodwell site (Stewart 1974:119) and the Keffer site (Stewart 1991:42) and caribou bone (*Rangifer tarandus*) from the Uren site (M. Wright 1986:57) reflect trade with northerners. A sudden increase in the frequency of beaver bones from a contact period Neutral site in the Crawford Lake area is suggestive of an increasing involvement in the fur trade with Europeans (Finlayson 1998:Table II.5.117). However, a similar situation existed at the Sidey-Mackay site in Petunia (Wintemberg 1946:155) where beaver remains were the most common mammal unlike the majority of sites where deer bone dominated but, in this instance, the site in question appears to have been too early to be seriously participating in a European stimulated trade. Beaver robes were an important commodity in native trading systems and an abundance of beaver bones could simply reflect this economic fact. An unusual bird effigy smoking pipe from the contact period Neutral Grimsby cemetery (Kenyon 1982) has been identified as a flamingo (*Phoenicopterus ruber*); a species of the southeastern United States (Bull and Farrand 1977:479) and probably relates to southern trade connections. An abundance of finished and unfinished stone pipes, mainly in a high quality limestone, on the Sidey-Mackay site (Wintemberg 1946) suggests local manufacture of stone pipes for trading purposes. At the contact period Huron site of Thomson-Walker an Oneota type smoking pipe was found (Latta 1996:Fig.2a). The descendants of Oneota culture, in what is now the Midwestern United States, are the Winnebago, Oto, Iowas, Missouri, and Osage, collectively known as the Chiwere Sioux (Gibbon 1998:612-613). Also suggestive of western contacts at this Huron site were stone gaming discs ranging in weight from 0.5 to 150 gm, some with incised crosses, which resemble the so-called 'chunky stone' gaming discs typical of Mississippian culture people to the west. The Winnebago in southern Wisconsin would have been closest to Huronia and are likely the source of the foregoing items (C. Mason 1988). The French observed the use of bison hide shields among the Odawa of Georgian Bay, again indicative of a western trade network which is also seen in the presence of catalinite ornaments in Huronia and elsewhere in Iroquoia.

One of the most obvious lines of evidence of external relationships is the fact that the Algonkin and Ojibwa people and their immediate ancestors to the north and east of Huronia and Petunia shared essentially the same pottery and pipe technological traditions with their Iroquoian neighbours, albeit with certain attribute distinctions (Wright 1981). Indeed, at the stratified Franks Bay site on Lake Nipissing (Ridley 1954) this continuity of shared Iroquoian pottery styles extends from approximately AD 900 to the contact period occupation by the Nipissing Algonquians.

Human biology:

Information on the human biology of the Ontario Iroquois comes mainly from skeletal remains and relates to matters such as relationships to earlier pre-horticultural populations, differences between contemporary populations based upon discrete genetic traits, local population profiles, pathology, and dietary evidence derived from dental and stable isotope studies. As has been aptly noted, "Illness, dietary composition and adequacy, habitual activities, and workload leave indelible imprints on bones and teeth" (Larson and Milner 1994:2). In short, the skeletal remains provide important insights into health, diet, and lifeways (Milner and Katzenberg 1999).

Dental conditions among the hunting and gathering ancestors of the Ontario Iroquois during Period IV (1,000 BC-AD 500) were characterized by low levels of caries (cavities) and tooth loss but high levels of tooth trauma, such as chipping, and moderate to severe attrition of the grinding surfaces. Their horticulturalist descendants, on the other hand, progressively tended towards high tooth loss and caries with low to moderate attrition and tooth chipping (Patterson 1986). Such trends reflect an increasing reliance upon high carbohydrate foods like corn and a reduction in the roughage of the natural animal and plant foods of the hunters and gatherers. As an example, cavities on both deciduous and permanent teeth on pre-horticulturists in Southern Ontario range from 0 to 6.5% with a mean of 4.5% compared to equivalent figures for horticulturists of 10.8 to 40.6% with a mean of 26.0% (Ibid:Table 6). It has even been possible to roughly seriate populations in time on the basis of dental disease and chewing patterns with earlier people making greater use of their back teeth as opposed to the increasing use of the front teeth by later people. Such evidence has been used to suggest that incipient horticulture first appeared in areas of Southern Ontario towards the end of Period IV and that the reliance on corn was a rapid process.

Establishing biological relationships between contemporaneous or descendant populations is a complex exercise involving many variables, biological and cultural. Discontinuous and nonmetric cranial traits, believed to reflect genetically derived ancestry and relationships, is one method commonly used. Coefficients of Diversity derived from genetically determined discontinuous morphological variations, for example, suggested a close relationship between the populations of the Pickering complex ossuaries at the Serpent Mounds site and the Pickering Miller site; a relationship supported by cultural similarities. The same study (Anderson 1968) also suggested that the aforementioned populations were morphologically intermediate between the Point Peninsula complex population of the Serpent Mounds site in Period IV and later Iroquoian populations. On the other hand, while the ossuary outside of the Middleport village site (Wintemberg 1948), on the basis of grave offerings, may relate to an earlier occupation of the site by Princess Point complex people, the skull traits suggested a close link to contact period Neutral and Huron populations (Molto 1983:Fig.5.3). This raises two issues. Is the Middleport ossuary indeed a later Iroquoian feature and not a Princess Point complex feature with inferred Algonquian ethnicity or, conversely, were neighbouring Iroquoian and Algonquian peoples really distinctively different regarding their cranial features? While physical anthropological studies of Ontario Iroquoispopulations have supported archaeological evidence indicating cultural continuity from the earlier hunting and gathering populations of Period IV, spatial variability, both geographical and biological, is only to be expected.

The vast majority of the evidence relating to death profiles of local populations has been derived from ossuaries. The minimum number of individuals from pre-European ossuaries range from 198 to 523 with an average of 403 and from 109 to 561 with an average of 307 for contact period Neutral and Huron ossuaries (Pfeiffer and Fairgrieve 1994:Table 2). Although these large secondary burial pits provide exceptionally large skeletal samples the said samples cannot be assumed to be completely representative. Infants and still-born were often accorded special treatment which did not involve secondary burial as did some adults although the number of individuals involved can be quite small. The extensive excavations of the contact period Huron Ball site, for example, uncovered only six burials ranging from infants to adults (Melbye 1983). Even the composition of the populations contributing their dead to a single ossuary is a matter of some debate (Sutton 1988). Were the dead of a single village or a number of related villages involved? Advances in the analytical methods available to physical anthropology suggest that females may have been underestimated in earlier studies and, thus, some caution should be used when using age and death distribution charts for demographic purposes (Melbye n.d.). On the other hand, the age of death pattern for the approximately thirty-two individuals from the Miller site (Ossenberg 1969) was remarkably similar to the percentages for the 512 individuals from the Fairty ossuary as was also the case with the percentages of immature individuals from the early 17th century Uxbridge ossuary which contained 457+ individuals (Pfeiffer 1986). Percentages of immature individuals from these three sites were 28%, 31%, and 32%, respectively. Non-ossuary burial of immature individuals undoubtedly inserts a demographic bias (Jackes 1986) and despite the Miller-Fairty-Uxbridge frequencies, the percentage of infants in ossuaries can be quite variable (Pfeiffer and Fairgrieve 1994:48) suggesting that cultural practices in this regard were also variable. Where the main demographic problem appears is when life expectancy is calculated without addressing the problem of under representation of a particular age group, particularly infants under one year of age. Thus, the life expectancy for the Uxbridge ossuary population of twenty-five years is, in all likelihood, too low. What is apparent, despite problems with absolute figures, is that the infant mortality rates were high (Pfeiffer and Fairgrieve 1994:Table 1; Saunders and Melbye 1990). Also, with reference to the suggestion that adult females may have been underestimated in earlier studies, such as the Fairty ossuary, at the 13th century Tabor Hill ossuaries adult males were stated to be represented by 75 individuals and adult females by 138 individuals with the imbalance being accounted for by male losses in warfare and hunting (Churcher and Kenyon 1960). Cultural factors have undoubtedly inserted a number of unknowable factors effecting the composition of ossuaries relative to the actual population

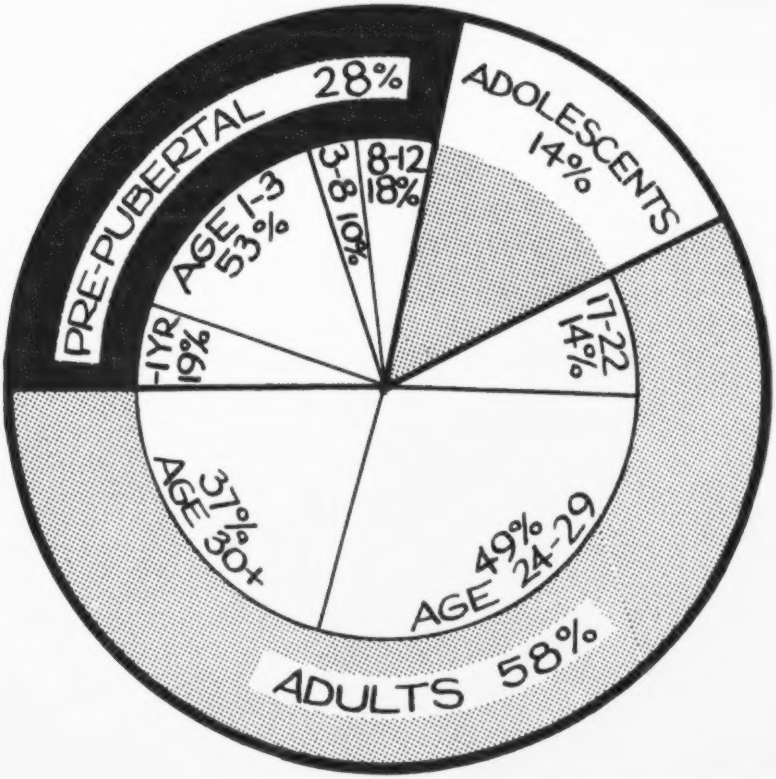


FIGURE 128: AGE DISTRIBUTION CHART OF THE FAIRTY OSSUARY POPULATION The mid-14th century Fairty ossuary north of Toronto was the first communal burial pit whose population was subjected to modern physical anthropological study (Anderson 1963). As cautioned above, the pre-pubertal percentage figure is very likely too small due to cultural factors which involved infants being buried in the longhouses and elsewhere and not being provided with final burial in the ossuary. (Reproduced from Anderson 1963:Fig.1).

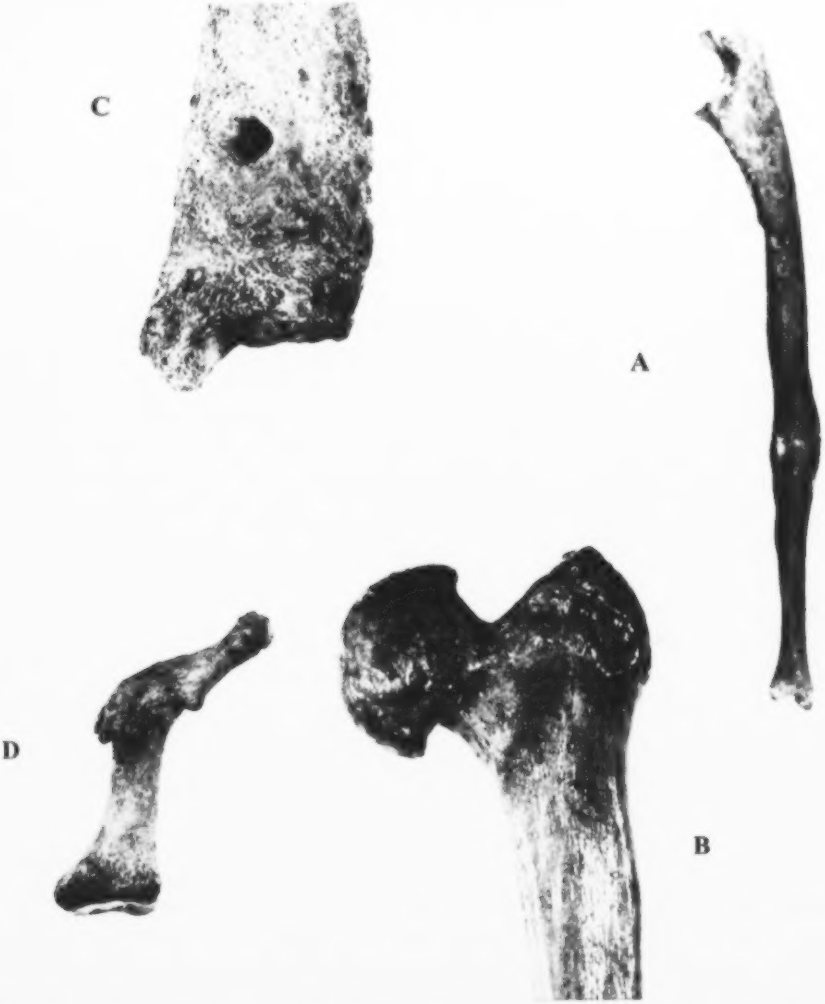
demography. There is also the insidious problem of always being able, on morphological traits alone, to accurately identify gender involving a percentage of gracile males and robust females.

Regarding stature, at the Miller site men averaged 171.7 cm (5'6") in height and women 166.4 cm (5'5") while the equivalent averages from the Tabor Hill ossuary were 167.6 cm (5'5") and 160.0 (5'3") cm, respectively (Churcher and Kenyon 1960:Table

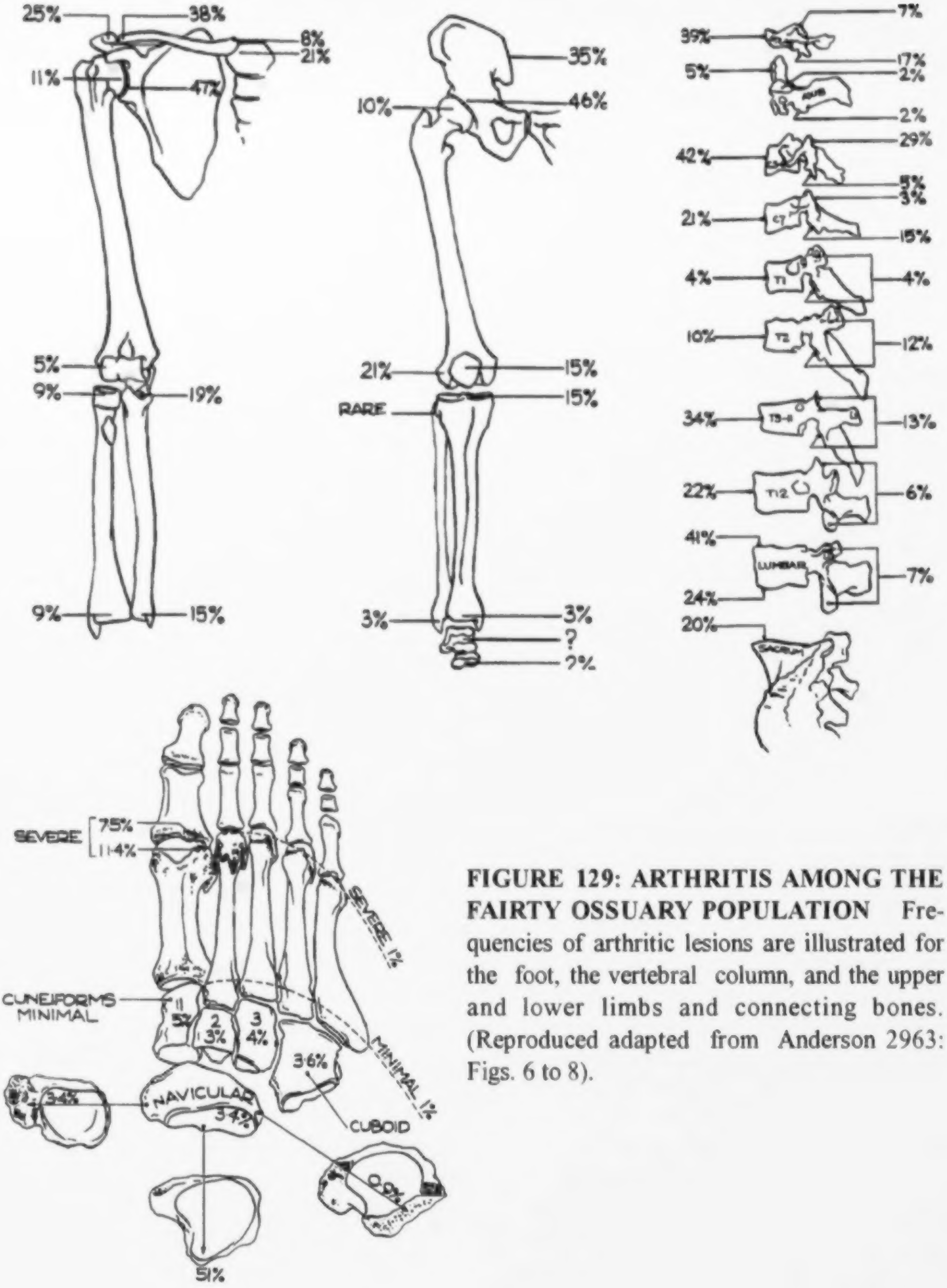
10). The population of ca 213 from the Tabor Hill ossuaries as opposed to 32 from the Miller site probably accounts for the height discrepancy between these two related skeletal populations rather than representing any significant reduction in height during the 400 to 500 years separating the two populations.

Despite an early French observation that the Huron were "...more healthy than we" (JR XXXVIII:257) the physical anthropological evidence suggests otherwise. Pathological conditions which leave identifiable lesions on bone include trauma (fracture), dietary deficiency conditions (rickets, hypoplasia), infections (tuberculosis), joint deterioration (arthritis), bony growths (cancer), and congenital abnormalities (Anderson 1961:XIV 1-2). The population of the Uxbridge ossuary revealed the following pathologies exclusive of a high incidence of cavities: 25% of radiographed second metacarpals (foot bones) had reduced cortical bone indicative of dietary deficiencies; 5.0 to 9.4% incidences of trauma although this figure would be reduced if vertebral compression fractures were excluded; 2% congenital abnormalities but not necessarily debilitating; 5% infections such as periostitis (inflammation of the pereosteum), osteitis (inflammation of the bone), and osteomyelitus (inflammation of the marrow cavity); and 6% of degenerative lesions, particularly of the lower thoracic and lumbar vertebral bodies, attributed to tuberculosis. With reference to the latter condition, the eighteen instances of adult bony tuberculosis would indicate a much higher presence of the disease as only a small percentage of such infections leave lesions on the bone (Pfeiffer1984; 1986:29). Tuberculosis is an epidemic disease associated with crowding and poor diet. As tuberculosis passes through endemic to epidemic stages whereby the disease is always present (endemic) but as people are born with less resistance it becomes epidemic (Pfeiffer and King 1983) it would appear from French records that among the Huron in the early 17th century the disease was in its endemic phase.

The nutritional value of plants to the diet, as opposed to simple calculations of total caloric value, is only beginning to be addressed by archaeobotanists (Monckton 1998; D. Wright 1991). Ascorbic acid or Vitamin C is particularly essential to good health. The rare instances of rickets in children being identified among Ontario Iroquois populations is somewhat of an anomaly given that the condition is a Vitamin D deficiency, a vitamin produced by exposure to sunlight and ingestion of fish oils, both of which would not have been in short supply for children. Evidence of growth retardation and health problems are reflected in depleated cortical bone in subadults where a body under nutritional stress will sacrifice bone thickness for bone length/width growth (Saunders and Melbye 1990:61). It has been noted that "Ontario Iroquoians may have maintained a nutritionally varied diet but other demographic and societal changes occurring just before and after contact could have otherwise comprised *(sic)* their health" (Ibid:71). Warfare could well have been one of the factors disruptive to balanced nutrition.



BLACK AND WHITE PLATE L: PATHOLOGIES AMONG THE FAIRTY OSSUARY POPULATION (A) - a healed fracture of the ulna; possibly from fending a club blow; (B) - a mushroomed head of a femur indicative of Legge-Perthe's disease; (C) - a draining sinus in the distal end of a tibia related to an osteomyelitis infection; and (D) - a distorted and fused foot bone, probably related to a healed fracture. (Reproduced and adapted from Anderson 1963:Plates XXIII, XXV, XXX, and XXXIII)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T3-11
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22%
T12
6%
41%
LUMBAR
7%
24%
20%
SACRUM
SEVERE
7.5%
11.4%
SEVERE 1%
CUNEIFORMS MINIMAL
1 5%
2 3%
3 4%
3.6%
NAVICULAR
3.4%
3.4%
MINIMAL 1%
CUBOID
0.9%
51%

FIGURE 129: ARTHRITIS AMONG THE FAIRTY OSSUARY POPULATION Frequencies of arthritic lesions are illustrated for the foot, the vertebral column, and the upper and lower limbs and connecting bones. (Reproduced adapted from Anderson 2963: Figs. 6 to 8).

General health characteristics of the Ontario Iroquois were early death, poor cortical bone development, high incidences of dental disease caused by a diet reliant on corn and lack of roughage, trauma, nonspecific infections, nutritional problems, and putative tuberculosis (Pfeiffer and Fairgrieve 1994:58). It has been speculated that ill health increases, relative to earlier hunters and gatherers, with the increasing reliance upon cultigens. Increased crowding and unsanitary conditions would further favour the contracting of the endemic-epidemic sequence of tuberculosis (Saunders et al. 1992:120-121). While the devastating impact of European disease upon native populations is evident from the documentary records there is increasing evidence that the concentration of people into large villages with their own pre-European pathogens would have resulted in a waxing and waning pattern of epidemics. In addition to mycobacterium tuberculosis other infectious agents would have been present (Ibid: 118-119). Ontario Iroquois populations were also plagued by chronic dietary insufficiencies relating to low calcium ingestion and calcium/phosphorous ratios (Pfeiffer and King 1983:23). Corn is naturally low in calcium and while it is high in phosphorous most of the latter is not available to the human digestive system. Such nutritional problems would have had a particularly severe impact on juvenile growth.

Inferences on society:

Elizabeth Tooker (1984) has provided a succinct outline of Iroquois social structure including its nuances. It was a social structure not based upon either political or economic power but rather on reciprocal obligations, whether they related to age, the relationship between the chiefs and the people, women and men, the burying of the dead, and the supernatural. Within the system the matrilineal clans mainly functioned as integrative units between villages. Women, as heads of the matrilineage clans, wielded considerable power as the keepers of a store of names of the deceased to be assigned to a new chief raised up during the Condolence Ceremony. They could also dispose of a chief who abused his assigned responsibilities. In addition, women owned the products of their labours in the field and, thus, had considerable control over the economic foundation of the society. Fundamental social change, relative to gender roles, must have taken place early in Period V and, apparently quite rapidly. In the main, Lewis Henry Morgan's proposed evolution of Iroquoian social structure as passing through a series of progressive changes starting with the family and ending with a confederacy of tribes (1851) appears to be borne out by the archaeological evidence (Noble 1969:25). This progression would have been from nuclear family to family lineage to village to clan (tribe) to multi-clan moieties and, finally, to confederacies.

Of all the archaeological aspects of the culture of the Ontario Iroquois settlement pattern evidence has been most informative regarding inferred changes to the social structure. The relatively sudden transition from hunters and gatherers to horticulturists, whereby women replaced men as the main food producers, must have had a massive impact on social organization. Women, in a most pragmatic sense, became the anchor of the community. The planting, tending, and harvesting of cultigens demanded a female sedentary existence centred on the village. Men, in contrast, would disperse for much of the year to hunt, fish, trade, and war. The multi-family longhouse, which replaced the earlier flimsy nuclear family dwellings of Period IV, is one of the clearest reflections of a significant change in social structure. Relative percentages of longhouse floor space dedicated to the central hearth-lined corridor, sleeping quarter areas, and the house end cubicles have been used to suggest the transition from a patrilocal to a matrilocal residence pattern; a transformation stated to have been completed by the late 12th to early 13th century (Kapches 1990:64-65, Fig.5). Kapches has further speculated that the increasing degree of organization of longhouse internal features represents additional evidence bearing on the transition from patrilocality to matrilocality whereby the senior matron of the matrilineage asserted increasing directional control within the household. Actually, the evidence from the Pickering Miller site (Kenyon 1968) would suggest an even earlier date for such a transition of somewhere in the 9th century or earlier. It would seem that a matrilineal system, whereby descent is traced through the female line, would be a logical extension of matrilocality as reflected in the longhouse and supported by eye-witness documentation. In general, matrilineal systems are associated with horticulture (Schneider and Gough 1961) and "...are probably to be sought in technology, division of labor, organization of work groups, control of resources, types of subsistence activities, and the ecological niches in which these activities occur" (Aberle 1961:725). Certainly the gaining of further insights into the transition to a matrilocal-matrilineal social structure from a presumably earlier patrilocal-patrilineal system is one of the greatest challenges facing archaeology regardless of the fact that the discipline is ill-equipped by its data base to address such complex matters. All knowledge, however, has an inherent probability factor and it behoves archaeologists to at least attempt to understand the potential social factors underlying the dramatic physical and sudden changes in settlement patterns and the appearance of the longhouse.

It has been argued that the apparently random longhouse orientations, relative to the cardinal directions, and the superimposing of longhouses over one another, indicative of sequential construction phases, in the Pickering complex suggest a lack of community planning and "...reflect an absence of formal village government and clans, weakly-developed matrilineages and low population densities" (Williamson 1990:306). With reference to overlapping house structures, while this is not a consistent feature of Pickering settlement, it could also be indicative of an earlier hunting and gathering settlement practice of reoccupying earlier sites. Further, the probability of an early presence of clans in eastern North America is supported by the close proximity of dual, contemporary cemeteries in Period IV, going back 3,000 years ago. These occurrences can be most readily explained as being the products of moieties composed of a number of different clans whose traditional ceremonial function was to the bury the dead and console the relatives of the opposite half of the moity (Wright 1999:695). There were at least three moieties among the Huron (Trigger 1976:749) who would have been composed of the eight Huron clans. These clans consisted of Turtle, Wolf, Bear, Beaver, Snake, Deer, Porcupine, and Hawk (Tooker 1970:93), although, on the basis of new linguistic evidence (Steckley 1982), Snake and Porcupine would be replaced with Loon or Sturgeon and Fox, respectively. The two late 13th century Tabor Hill site ossuaries, situated on the highest hill in the area and 2 km from the Uren substage Thompson village site (Kenyon and Churcher 1960), possibly are a reflection of moiety reciprocal burial by clan groupings, a practice well documented in the historic records (Fenton 1998). Similarly, two ossuaries in close proximity to one another occurred immediately south of the early 17th century Huron town of Cahiagué (Heidenreich 1987: Plate 34). Neutral ossuaries with human remains occurring in two layers separated by an intervening deposit of sterile soil, could also possibly relate to moiety-based ceremonialism, although the erratic occurrence of these features makes their social function difficult to interpret (M. Wright 1981:130).

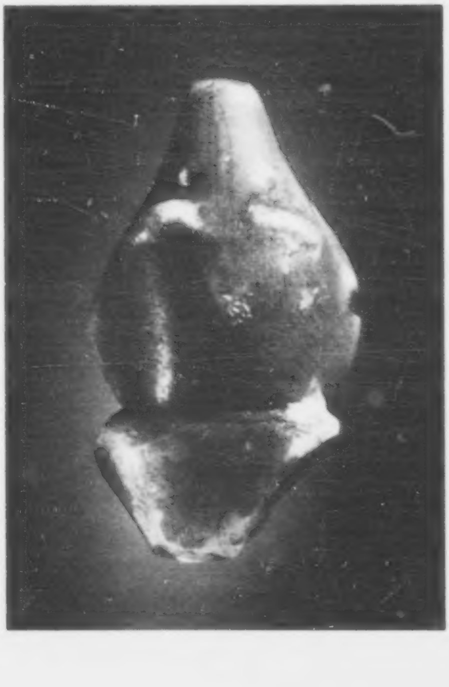
At another social level, as early as the 9th century the clustering together of Pickering complex villages in relatively close proximity to one another suggests the early existence of some form of tribal organization. Tribal level village life could have been an early core element of Ontario Iroquois culture although with reference to confederacies, "...external polity of tribes is usually military only" (Service 1962:144). The considerable degree of technological heterogeneity between villages (Finlayson 1998; Varley 1993) confirms ethnological observations, such as those of Lewis Henry Morgan (1851) who noted that the village was an essentially autonomous, distinct entity and represented the core unit of Iroquoian social structure within a confederacy of communities generally speaking the same language except for the case of the League of the Iroquois (Fenton 1951). Even in terms of technology, a recent study of pottery motifs within a single village revealed considerable heterogeneity (J. Wright 1999) and thus raised questions regarding the assumption that village pottery style homogeneity, in lieu of good contextual controls, can be used to posit the rise of matrilocality (Whallon 1968:241). The foregoing archaeological evidence suggests that the essential elements of Iroquoian social structure were in place earlier than has been generally appreciated. This, of course, does not imply that progressive elaboration of the system did not take place through time. Longhouse orientations within villages, for example, tend to be random prior to the late 13th century after which they are more often aligned as various constellations of parallel clusters. There is, however, some suggestion of nonrandom longhouse orientations as early as the 9th to 10th centuries at the Miller site (Finlayson 1985:435; Kenyon 1968:Fig.5). Clusters of similarly aligned longhouses have often been attributed to clan segments composed of matrilineal households with the two or three differently aligned clusters in large villages forming clan barrios (Warrick 1984). There is no question that both village size and the densities of village clusterings become larger during the 14th century and undoubtedly reflect an increasing reliance upon a horticultural economy and increasing hostilities with neighbouring tribes and confederacies. Another factor involved in the establishment of larger villages and more villages clustering in proximity to one another would have been the increasing importance of confederacies as mutual nonaggression and military defence and offence pacts. As has been noted, "Sedentary horticultural villages appeared suddenly in Ontario with longhouses, palisaded villages, and ossuaries. This would suggest that there was likely a long period of pre-village horticultural experimentation that, once initiated, led to exponential and eventually sudden changes in not only subsistence but also settlement patterns, technology, and all other aspects of culture including social structure" (Wright 1998:xiv).

The Neutral in the early 17th century were a confederacy composed of possibly as many as nine tribes while the Huron and the Tionnotaté confederacies consisted of five and two tribes, respectively. According to French documents, the Huron attributed the beginning of the founding of their Confederacy in AD 1440 to an agreement between the Attignawantan, one of the Northern Division tribes in Huronia proper, and the Attigneenongnahac, a Southern Division tribe who eventually migrated into Huronia (Trigger 1976:163). There must have existed a tacit understanding with the other two Northern Division tribes in Huronia, who were located in between the first two confederated tribes as well as with another Southern Division tribe shifting their villages up the Trent River system to reach Huronia proper around the end of the 16th century. For the geographical locations of these tribes in Huronia at the time of European contact see Heidenreich (1987:Plate 34). In addition to the foregoing, at least two other Southern Division tribes moved northward to Georgian Bay to be known as the Tionnontaté. It is not known how many tribes were involved in the Erie Confederacy. None of these confederacies should be regarded as "...a homogeneous cultural entity, but as a collection of individual, territorial communities or tribes, each with its own distinctive identity" (Lennox and Fitzgerald 1990:456). A majority of Iroquoianists have fixed the beginning of the establishment of the League of the Iroquois to the mid-15th century (Fenton 1998:Table 1). The use of the word "beginning" is advisable as the formation of the Confederation was a gradual process, starting with two or all three of the eastern tribes (Onondaga, Oneida, and Mohawk) with the Seneca only joining around the end of the 16th century (Kuhn and Sempowski 2001). If the eastern Iroquois initiated the formation of a confederacy around the same time that two of the Huron tribes were beginning an equivalent political process then it is reasonable to speculate the two developments were not independent of one another. For example, the two Southern Division Huron tribes on the north shore of Lake Ontario and in the upper Trent River drainage shifted the locations of their villages by 100 km or more to the north and west, respectively, away from the League of the Iroquois and, in particular, the eastern members of the Confederacy while the villages of the latter did not shift significantly in geographical terms. Similar to the two Huron tribes which joined the Huron confederacy, the remaining two Southern Division tribes shifted northward to Georgian Bay to become the Tionnontaté, a distance of some 130 km.

It could be inferred that the eastern Iroquois began the process of confederation first and only then did the Huron tribes most vulnerable to attack from the new confederacy of tribes begin their political negotiations to form an equivalent and counterbalancing confederacy. While the League of the Iroquois had political strength based on diplomacy it was still socially weak, like other Iroquoian confederacies, given the local autonomy of the component parts (Fenton 1998:715). Confederacies, whose central purpose was to establish non-aggression pacts with neighbouring people in order to mitigate the effects of blood feuds but also to initiate cooperative military ventures likely had a much longer history than European documentation would indicate as suggested by the clustering of contemporary villages as early as the 9th or 10th century and other events like the dispersal of the Glen Meyer complex at the end of the 13th century.

The earliest archaeological evidence bearing on a confederacy whose purpose was militaristic pertains to the 13th century with the proposition that elements of the Pickering complex east of the Niagara Escarpment moved westward and conquered, dispersed, and, in part, absorbed the Glen Meyer populations who had resided in the area from at least AD 500 and probably earlier (Wright 1966). From its inception, the Conquest Theory has elicited considerable controversy with many archaeologists favouring a less draconian explanation for the dramatic cultural changes west of the Niagara Escarpment in the late 13th century (Williamson 1990). A recent reassessment of current evidence, drawn from technology, settlement patterns, and burial practices, has only added support to the original conquest proposal (Wright 1992). Support has come from Finlayson's study of Iroquoian cultural development from the 11th to early 17th centuries in the Niagara Escarpment area (Finlayson 1998). In this frontier area between the Pickering and Glen Meyer complexes large palisaded Pickering villages are typical but after the proposed conquest, with the frontier shifting westward, the local descendant Uren villages lacked palisades and the widely spaced houses indicate that defence was no longer a significant concern. These settlement pattern features also suggest that the aforementioned Uren villages had made alliances with neighbouring communities to both the west and east (Finlayson 1998:410). In sum, the archaeological evidence suggests that sometime in the 13th century a number of the Pickering complex villages had achieved a level of political sophistication which permitted them to form an effective military confederacy for purposes of a campaign of conquest and occupation. If, as suspected, the Glen Meyer villages were unable to establish an equivalent confederacy and had fought as individual communities, the outcome of the conflict would have been a forgone conclusion. The capability to form a confederacy of villages, regardless of the possible motives of economics, revenge, security, or power, provided the means to achieve military conquest. Put another way, horticulture led to increased population density and sedentary settlements which required increasingly complex social systems to assist large populations to exist together in harmony which led to conflict with neighbouring tribes which led to confederacies which led to human mayhem on a hitherto unknown scale. While Ontario Iroquois confederacies preceded the appearance of Europeans by more than 300 years it does appear that the elaboration of confederacies was mainly a mid-15th to early 16th century phenomenon. This was the period when three hectare, heavily defended villages composed of the merging of smaller villages, and other evidence of increasing hostilities appear (Williamson 1998:13). Increasing evidence of hostilities have been attributed to hunting being largely replaced by horticulture as the economic food base leading males to seek prestige in combat with the result of spiralling blood feuds exacerbated by the diffusion of southern religious influences relating to prisoner sacrifice to the sun and a life-giving war deity (Trigger 1981:34). Along with the formation of large confederacies were a series of major tribal movements that likely were strategic adjustments to the threat posed by neighbouring confederacies. Curiously, these populations shifts relate to all of the Iroquoian populations in eastern North America with the exception of the Iroquois League tribes. The Southern Division Huron tribes shifted northward up the tributaries of Lake Ontario into Huronia and Petunia. The westernmost Neutral tribes contracted eastward to establish themselves north of the indigenous Neutral Confederacy. Neutral villages east of the Niagara River moved westward across the River. The Erie tribes shifted southward in New York. And, the Susquehannock moved south from the headwaters of the Susquehanna River in New York to near Chesapeake Bay in Pennsylvania. The only common factor in all of these significant population movements appears to be the atypically stationary League Iroquois tribes. It is suspected that the League of the Iroquois, representing a confederacy which, for the first time, incorporated distant tribes like the Seneca and the Mohawk, was construed as a major threat by its neighbours. This, in turn, would suggest that neighbouring confederacies recognized that the League of the Iroquois confederacy was a particularly cohesive and, thus, dangerous political reality.

Wampum belts were regarded as important contractual agreements among Iroquoian people as well as non-Iroquoian people, whether they be Algonquians or Europeans. The Algonquian word "wampum" refers to marine shell beads, initially of cylindrical and then discoidal forms, which were sewn onto belts conveying treaty agreements and other pledges (Fenton 1998:Chapter 16). Contrary to Fenton, however, both cylindrical and discoidal forms of marine shell beads have considerable antiquity in eastern North



COLOUR PLATE XXVII: A STRIKING EFFIGY PIPE Recovered from an early 17th century village by the late Mr. Frank Ridley during a provincial assessment of the state of Huron village sites in Huronia this effigy pipe fragment in slate is an outstanding example of the skill of the Iroquoian artisan. Slightly over 4 cm in height, the human features are depicted in a typical stylized fashion. Historic documentation indicates that pipes in Iroquoian society were made and smoked by men and had symbolic significance which may, on occasion, have related to clan affiliation. It could be speculated, for example, that the bear headdress depicted in the effigy symbolized that the pipe's owner was a member of the Bear Clan, one of the clans or moieties which constituted the social and political structure of Huron society. On the other hand, the view of the minute image engraved on the forehead of the bear, first noted by Joyce M. Wright, could be either a makers mark or a replication of one of the bird clans for which the Huron would have to be the Hawk or possibly Loon. Given the abundance of evidence of stone pipe manufacturing at the Tionnontaté village of Sidey-Mackay the pipe could even be a trade item. This pipe has been illustrated in a number of previously published works, including the Title Page illustration of Dr. Bruce G. Trigger's monumental 1976 publication "The Children of Aataentsic, A History of the Huron People to 1660", McGill-Queen's University Press. (Appreciation is extended to Professor Susan Jamieson, Department of Anthropology, Trent University who loaned the specimen to the Canadian Museum of Civilization for replication and photography. Photograph by Mr. Harry Foster, Canadian Museum of Civilization).

America. Both forms are relatively rare on all Iroquoian sites until the European contact period when they become an important item, first as large beads used as ornaments and then as the smaller forms which could be incorporated onto hide belts. An exceptional find was an early 17th century example of a wampum belt excavated at the Neutral Grimsby cemetery. The belt measured 29 by 5.5 cm and was composed of 267 European glass beads and 33 shell beads (Kenyon 1982:158). Given the importance of such belts to inter-tribal negotiations at the contact period with Europeans it is likely that some form of perishable equivalent once existed prior to the late fluorescence of shell and glass versions; possibly in the form of belts made with dyed bird and/or porcupine quills.

The detailed study of technology in the Niagara Escarpment sites has not only permitted the differentiation of proto-Huron from proto-Neutral sites in the area but has also identified artifact style differences between the contemporary related villages leading to the observation that "Current evidence suggests that alliance formation and maintenance were key factors in the changes which these societies and their material culture underwent" (Finlayson 1998:vi). It has been speculated that the high collared pottery vessels pertained to feasting associated with confederacy formation among groupings of villages, a position supported by the correlation of high collared vessel frequency with the evidence of dog feasts. Finlayson's proposed correspondences between the present day Yanomamo slash and burn horticulturists of Venezuela-Brazil and Huron ethnography, relative to the Niagara Escarpment Iroquoian sequence, has the essential quality of being testable. Alliance formation between communities and tribes involved trade, feasting, smoking, sweating, and female exchanges, in the latter incidence to bind agreement with a blood bond. Throughout the more than 600 year developmental sequence in the Crawford Lake area the essentials of Ontario Iroquois culture were firmly established as judged by orientations of longhouse clusters, special visitor's dwellings, multiple secondary burial leading to large ossuaries, palisades, amalgamations of two or more villages, and formation of confederacies for military purposes in a frontier region. Only during the very beginning of these developments are larger chiefs houses not identified.

There has been a suggestion that the longhouses of chiefs can be identified by the presence of high frequencies of wealth objects and "...that trade was responsible for the development of longhouse residential units..." representing corporate groups held together by trade (Hayden 1976:3). To the contrary, "Property rights, then, were probably of little importance in Iroquois society and, in fact, there were relatively little in the economic organization to "control". What little there was, was fairly equally apportioned among individuals in the society" (Tooker 1984:117). Further, there is only limited archaeological evidence of trade among the Ontario Iroquois until European contact while longhouse residences were in place by the 9th century. Longhouse length has also been considered a significant factor relative to a chief's residence (Dodd 1984:298) although house width and/or width of the bunklines are likely more accurate indicators of chiefly requirements to accommodate large public gatherings. Variable lengths of longhouses within villages more likely relate to differences in membership in any particular matrilineage. On a similar theme, spacing of hearth floors down the central corridor of the longhouse have been suggested to reflect the status position of the occupants as determined by widely spaced hearths (Varley and Cannon 1994). Central corridor hearth spacing, however, is quite variable and is unlikely to reflect prestige. Nodwell site central corridor hearth spacing ranged from 1.8 to 6.7 m with an average of 5.1 m. Equivalent figures from the Southern Division Draper site and the Northern Division Carson site are 6.5 to 9.3 and 7.5 m and 8.7 to 11.4 and 10.8 m, respectively. At both the 14th century Nodwell site (Wright 1974) and the early contact Molson site (Lennox 2000), as well as other sites, specific dwellings have been identified as being chief's houses. House 10 at the Nodwell site was not the longest house in the village but, with an exceptional width of 8.2 m, it was the largest in terms of interior space. It also possessed 1.8 m wide bunklines rather than the highly standardized 1.5 m ones of the other houses. And, with regard to possible "wealth" items like native copper implements and ornaments, House 10 was essentially the same as the other houses as was also the case with the occurrence of smoking pipes and their presumed association with ceremonial activities. Efforts to relate smoking pipe and pottery style distributions within village longhouses, in an effort to identify non-random distributions indicative of different social units such as clans or clan lineage segments, has so far been unsuccessful (Smith 1991:25; VonGernet 1985; Wright 1974). Instead, pipe style distributions have been attributed to other considerations such as gift exchange, gambling, and dream gift desires. (VonGernet 1982:164-166).

It has been observed that 40%+ of burials within villages like Draper, Keffer, and Ball pertain to infants or very young children (Saunders and Spence 1986:46). Presumably such burials in the longhouses relate to the mother of the deceased individual's clan house. It has been further speculated that many late fetal and full term infants so buried represent children born alive but who perished prior to the naming ceremony and were therefore provided with special treatment as opposed to children who died after being named and who found final internment in an ossuary. There is also evidence that invalids were cared for until their death. A Tionnontaté woman's needs, crippled early in life by congenital, bilateral hip dislocation due to severe degenerative arthritis, were attended to over a prolonged period (Garrad 1970).

A suggestion that at the time of European contact the Neutral Confederacy had evolved into a chiefdom under the rule of a chief called Souharissen (Jamieson 1996; Noble 1978:153; 1985) is not convincing and certainly cannot be demonstrated by archaeological means. Even an admittedly powerful chief does not a chiefdom make, particularly within the fundamentally egalitarian Iroquoian society. Noble based his argument for a chiefdom mainly on the 1627 comment of the Recollet priest Daillon and subsequent Jesuit accounts (JR XXI:207-209, 215-217). The initial suggestion has even stimulated the speculation that the Huron of the early 17th century were an incipient chiefdom (Jamieson 1981:26) and that control over trade routes and prestige enhancing redistribution of wealth led to social stratification. There certainly is no archaeological evidence to support such a development and the proposition likely stems from accepting European interpretations of inherited chiefly positions in Iroquoian societies as evidence of a social hierarchy while not recognizing that the position was important and not the incumbent. In short, these inherited positions were honorific titles which could be withdrawn if the associated responsibilities of the position were not being met in an appropriate fashion. Pertinent to the foregoing is the observation that "Some of the fundamental tenets of Ontario Iroquoian belief, which are strongly communal and egalitarian, can be seen at work in a variety of Late Woodland mortuary traits, in particular 1} the rarity of grave offerings; 2} the disinclination to differentiate individuals in the final burial; 3} a two-stage mortuary programme, tied to the community cycle; 4} the use of the final burial to confirm or even redefine the relevant social universe of the community; and 5} the presence of distinct mortuary tracts for some whose inclusion in the final burial would be detrimental to the community..." (Ferris and Ramsden 1995:115).

Prestige associated with inherited titles likely had a long history among the Iroquoian people but as such positions held no coercive power they could not result in the autocratic social structure explicit in a chiefdom; particularly so in societies where unanimity of opinion was the rule. In summary, it is extremely doubtful that any Iroquoian group would have developed into a chiefdom without a nearly total transformation of deeply held values and the replacement of a sophisticated social/political system which worked quite well without a formalized class of nobility. The flexibility of the system rested on a number of lineages grouped into exogamous clans with reciprocal responsibilities including those of the moieties. Further, the system possessed an intertribal dimension beyond that involving only closely related tribes. The Turtle, Wolf, and Bear clans of the Huron were shared with all of the League Iroquois and the Deer and Beaver clans were shared with the Onondaga, Cayuga, and Seneca (Fenton 1978:Table 1). Only the Sturgeon and Fox clans were unique to the Huron but their identification is still tenuous. It is also significant that the names of the three Huron moieties, Bear, Turtle, and Wolf mirrored the clan structure of all known Iroquoian people (Steckley 1982:33).

Finally, alliances existed with neighbouring Algonquian people. These included the alliances between the Huron and the Montagnais-Algonkin versus the League of the Iroquois and the Neutral, Tionnontaté and the Odawa versus the Fire Nation.

To conclude with a social problem known to all cultures is a consideration of the act of suicide. Suicide among the Iroquoian people, including the Huron, appears to have been rare except during the painful cultural transition under European domination (Fenton 1941). In a Huron case, "Another took some Hemlock juice, because she could not bear to see herself abandoned by her husband, who married her rival." (JR LXVII:165). In a majority of recorded cases the suicides are caused by personal social disruptions such the death of a mate or abandonment by same. Women appear to have been most susceptible to suicide by the use of poisonous plants. Men entertained more violent methods. The act of suicide was strongly discouraged by the values of society. The Huron had a definite concept that suicide was not acceptable behaviour, a position supported by a "...concept of allotted life and exclusion from the land of the dead..." of people who committed suicide (Fenton 1941:134). The main method of suicide was the ingestion of the root of the waterhemlock (*Cicuta maculata*) and secondarily May Apples (*Podophyllum peltatum*) (Fenton 1941).

Regarding all of the foregoing it must be emphasized that, "Experience indicates that we are unlikely to resolve in a wholly convincing manner any problems related to Iroquoian social and political organization by applying analytical techniques to bodies of data isolated from their broader contexts. Few problems can be understood on their own terms. Instead, they must be investigated in a holistic manner that takes account of the relationship of what is being investigated to the total patterns of Iroquoian cultures and their historical development" (Trigger 1981:40). The foregoing quote, with which I wholeheartedly agree, stands in contrast to the propositions in the latest publication of Lewis Binford (2001). Unlike many other theorists, Binford to his credit recognizes the critical importance of data. Unfortunately, in his search for objectivity and adherence to the defunct philosophy of logical positivism, the laudable goals he sets for his data are essentially unattainable. His classification of data in order to mathematically manipulate it for statistical purposes is weakened by generalizations, coding problems, and an excessive reliance on analogs. Forcing data into unaccommodating abstract boxes truncates the innumerable tendrils of information which interconnects all data. In short, in order to reduce data to a mathematically manipulable abstraction the relationship of any piece of data is weakened by its isolation of the whole of which it is an integral part. While much useful information has been provided by increasingly objective analyses the potential of this approach has severe limitations when it comes to providing a broad view of complex matters such as cosmology and political and social inferences which will always require some degree of subjective probabilities.

Limitations in the evidence:

Destruction of Ontario Iroquois village and burial sites has been extensive given their concentration in areas now occupied by large cities like Toronto, Hamilton, London and their environs which have been subjected to massive urban expansion, gravel and sand extraction, and highway construction. Looting of ossuaries, prompted by morbid curiosity and curio collecting, has been particularly destructive. By the beginning of the 20th century in Huronia "...about 200 such communal pits..." had been vandalized (Hunter 1907:31-34). Ossuaries were often marked by a surface circular depression and were, therefore, particularly vulnerable to detection. A similar fate also befell the Neutral ossuaries beginning as early as the 1820's (Lennox and Fitzgerald 1990:453; Ridley 1961). Later professional archaeological excavation of looted ossuaries has revealed how little information remains (Reid and Conway 1976). Naturally, native people are outraged by such barbaric ethnocentric and insensitive behaviour and archaeologists are not excluded from criticism. "Graves have been desecrated and robbed for "cultural treasures" - Bones of dead people are placed on view to unsympathetic eyes and impressionable minds that do not understand what scholars have done. This is a great crime against the Iroquois, all people and the Creator. Indian people ask that it be stopped" (Hill and Grindle 1975:58-59). In addition to urban growth and its associated land modifications and the looting, early European settler lumber and flour mills with their power generating holding ponds, bridge construction, and other activities concentrated around the first upriver rapids would have destroyed numerous seasonal fishing camps located in the same locales.

The Ontario Heritage Act has required excavators of archaeological sites to have permits and, thus, at least in terms of the law, made looting illegal. The Environmental Assessment Act has required mitigation of the non-intentional destruction of archaeological heritage by activities which disturb or flood the land. The latter legislation has resulted in a new body of archaeologists, called consultant archaeologists, whose business it is to be responsible for archaeological salvage work prior to destruction of sites by construction. These archaeologists have generated a considerable amount of new information. Unfortunately much of it is unavailable in the form of published reports. There are exceptions, of course, such as the London Museum of Archaeology and the consulting firm Archaeological Services, Inc. who have made an effort to publish the detailed results of mitigation activities. Consultant archaeologists, however, cannot be too harshly criticized for this growing body of "grey literature" as there is nothing in the legislation that requires a publishable report at the end of a project. An example of the extent of this problem is the fact that of the 417 longhouse floor plans described in a recent publication only 20% have appeared in publications (Dodd 1984:184). Governments have not accepted a responsibility to curate archaeological collections and records resulting from the Cultural Resource Management (CRM) projects required by legislation. CRM work has also had internal problems like underbidding on projects to suite a client's economic concerns. CRM archaeologists are fortunately addressing such issues as it is both in their own self interest and the protection of the heritage which they are mandated to preserve.

As always in archaeology, analytical procedures, theoretical orientations, and attitudes towards the relation of data to interpretations has resulted in a broad spectrum of opinions; often at variance with one another. There is the problem of the degree of validity involved in establishing cultural history based upon small samples (Bursey 1993). This limitation persists despite evidence from extensive village site excavations that there is considerable variability in pottery characteristics across a village and, specifically between individual houses (Robertson et al. 1995:81; J. Wright 1999:Table 5). There are also problems with perceptions relating to archaeological classification. For example, there has been criticism of the Ontario Iroquois tradition classification which appears to stem from a misplaced belief that only a single level of classification should prevail rather than a hierarchy composed of different levels of classificatory abstraction required to accommodate different levels of specificity and generality. Archaeological taxonomy will always be simplistic and, to varying degrees, possess subjective elements in respect to the human phenomenon it is trying to comprehend. The Ontario Iroquois tradition, for example, was never intended as some kind of monolithic, inflexible, constraining construct unamenable to modification. On the contrary, it was always intended as a general organizational device which was not only open-ended but also quite capable of incorporating such concerns as regional complexity. As an example, the removal of the

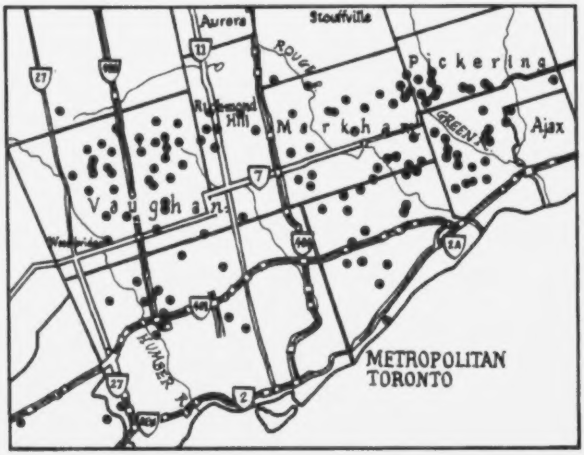


FIGURE 130: LOCATION OF GREATER METROPOLITAN TORONTO AREA ONTARIO IROQUOIS SITES Of the more than one hundred *known* sites involved many have been totally destroyed by urban activities and the majority have never been subjected to archaeological investigation. The use of the qualifier *known* is advisable. Recent archaeological reconnaissance of the nearly 7,500 hectares of the New Toronto Airport, immediately east of Toronto, revealed eleven village and hamlet sites where only two villages had been known previously (Finlayson et al. 1987:24). (Reproduced with permission from Finlayson et al. 1987:4)

Glen Meyer complex from the Early Ontario Iroquois stage advocated here has no significant impact upon the overall structure of the classification. An archaeologist reconstructing the cultural history of a small river valley is faced with a different level of classification than an archaeologist attempting to synthesize the cultural history of a larger region, a province or a country. Most telling is that the aforementioned criticism of the Ontario Iroquois tradition invariably fails to offer a substitute classification supported by substantive data. In a recent article advocating the abandonment of the Ontario Iroquois tradition classificatory structure it is still acknowledge that the earlier cultural construct is "... a convenient tool to simplify communication among researchers" (Williamson and Robertson 1994:10). That is all that it was ever intended to be and its continued use, despite complaints, is proof that the classification still has some utility and the detractors have not been able to propose an appropriate replacement which is more accommodating to their needs. This opposition to broad archaeological taxonomic units appears to stem from an over-emphasis of the importance of regional social and political developments as well as a misplaced belief that somehow the broader classification inhibits the study of more regional developments (Ferris and Spence 1995:83). There is also a tendency to assume that consensus rules in debates over such matters as the Conquest Theory in the Ontario Iroquois tradition (Ferris and Spence 1995:110; Williamson 1990:311-312). If the history of science teaches anything it is that scholarly consensus does not necessarily represent the Holy Grail of truth much less a reliable indicator of the efficacy of any particular interpretation of the data.

A persistent problem relevant to archaeological interpretation has been the representativeness of site samples, particularly samples lacking specific archaeological contexts. Even when samples are drawn from middens or houses their random nature across the entire site and thus their overall representativeness relative to the entire village is far from being an established fact (Bellhouse and Finlayson 1979). The problem of adequate samples from which to generalize patterns and phenomenon has been particularly troublesome for archaeologists who have based village relationships mainly on pottery recovered from the different middens of a site. A further difficulty has been differing individual classifications of the same pottery types (Lennox et al. 1986:67-75). Such problems, like most problems, however, appears to be mainly of degree rather than kind. As an example, in a most unusual circumstance two archaeologists, unbeknownst to each other, excavated and published on the same site to which they have given different site names (Emerson 1966; Pendergast 1963). Both researchers used MacNeish's pottery classification (1952) and analysed rim fragments rather than vessels; the latter procedure itself introducing a potential error factor of approximately 16% (J. Wright 1999:Table 2). Rim sherd sample sizes from both excavations were deemed to be representative. Even allowing for the foregoing limitations, the two samples produced a Coefficient of Similarity of 149.0 suggesting that there was still some rough comparative validity in the information provided by such variable sampling procedures. This very general relationship pertained in spite of demonstrable internal variability in the occurrence of pottery styles across a site where archaeological contexts are well established (J. Wright 1999:Chart 1, 49; M. Wright 1986:65). Five pottery types dominated the two collections from the Payne site with occurrences of 66% and 79%. Similarly, a comparison of pottery attributes from the original excavation of the Uren site (Wintemberg 1928) and a subsequent excavation revealed some significant differences (M. Wright 1986:63), once again reflecting the nonrandom nature of the distribution of the archaeological materials across village sites. There is also the matter of mass. The nearly complete excavation of the Keffer site north of Toronto produced fragments representative of nearly 5,000 pottery vessels and 400 pottery pipes (Smith 1991:1). Many archaeologists, however, would feel perfectly justified to compare the Keffer site sample with a sample from another site of fifty vessels. The differing contexts of the Keffer site sample, which represented the universe of the village, was used to assess distribution variability and produced important temporal results bearing on the different periods of longhouse construction at the site. Thus, time as well as space can be critical factors bearing on site samples. At an analytical level even the basic unit of analysis has not been entirely agreed upon. There is still a mix of site comparative units represented by vessel analyses, rim analyses, or some combination of the two. While computer analyses of attributes provides an effective means of manipulating the masses of attribute data (Smith 1997) it does pose the risk of too much detail, pertinent and extraneous, whereby the forest cannot be seen for the trees. The problem of achieving objective and comparable analyses using either typological or attribute approaches is a major limitation that is not likely to be resolved in the near future (Lennox and Kenyon 1984).

An insidious and probably immeasurable problem relates to the fact that the majority of archaeologists are urbanites who have had limited exposure to the various realities of nature in contrast to those raised in rural or "bush" environments. Many archaeologists probably instinctively recognize this as an empirical bias which needs to be addressed while others appear to be oblivious to potential misinterpretations of data when intellectually clever thoughts are divorced from the physical realities of the natural environment to which they are being applied. For example, village palisades have been interpreted as snow fences or barriers to keep marauding animals out of the village rather than being defences against attack from an enemy. Palisades have even been speculated to have functioned as political control devices required to exert physical authority over the community by powerful chiefs acting in their own self-interest (Ramsden 1996). Iroquoian warfare prior to the appearance of Europeans has been portrayed as a couple of young bucks hanging out in a corn field waiting for an opportunity to bop someone on the head; a view which ignores such physical evidence as the existence of heavily defended three hectare villages containing large quantities of alien pottery indicative of female captives such as was found on the Neutral Hamilton site (Lennox 1981). It also ignores early French records of Neutral armies of up to 2,000 warriors. A related problem has been a tendency for some archaeologists to view ethnological research on Iroquoian people (Fenton 1951; 1978; Morgan 1851) as being irrelevant to their research or the benefits of striving for a broadly based knowledge of the extant archaeological literature as it pertains to Iroquoian people, in general, as well as including some knowledge of *all* of the regional and temporal dimensions of the Ontario Iroquois. Particularly astounding is the proposition that the 17th century French documents of the Recollets, Jesuits, and individuals like Samuel de Champlain are not relevant to archaeological interpretations and can even be detrimental to the advancement of archaeological knowledge (Ramsden 1996:105). Such intellectually constraining attitudes ill-serve either the discipline or scholarship in general.

Some flawed interpretations relating to European and Huron contacts are particularly tenacious despite the archaeological evidence. These include the suggestion that contact took place in the early 16th century and that, therefore, the early 17th century French documentation on the Huron, and presumably the Neutral, pertains to cultures already in transition as a result of European influence (Trigger 1981:9). There is no clear archaeological evidence of any significant contact in the early 16th century. Pas ethnocentric use of economic determinism, premised upon the importance of European trade, to explain village movements and amalgamations more often than not bears little relationship to the archaeological evidence. For example, it has been proposed that the

Trent River Huron population at the Benson site, a site with European trade goods, were trading with the St.Lawrence Iroquois, where there is no archaeological evidence of European trade goods, while the Sidey-Mackay site population in Petunia, with limited evidence of European contact, were trading beaver pelts to the Benson site people (Ramsden 1977:285-286). Such scenarios, involving selective 'trait picking' or 'clever thoughts' to establish relationships between villages and postulates of far flung trade networks, can only be regarded as 'just-so-stories'. On the basis of a few brass beads from sites on the upper Trent River, like Coulter and Kirche, it has been speculated that European trade was so important that it was responsible for intense competition with the St.Lawrence Iroquois for European trade leading to conflict, migration, and coalescence of smaller villages into large villages like the Coulter site (Damkjar 1990:50). These scenarios are then exacerbated by erecting straw men, such as the comment that attributing alien pottery on sites to captive women is sexist, substantial fortifications were not intended to ward off mass attacks but, rather, were a social-political statement regarding who was "in" and who was "out" and, of lesser importance, wind breaks, and historical documentation is not to be trusted (Ramsden 1990b; 1996). Historical documentation has always been used as an adjunct to archaeological interpretation and not as overriding documents to be confirmed by archaeology. Indeed, on a number of instances archaeology has corrected errors of observation or subsequent interpretation in the early European written records. With reference to warfare, pre-European archaeological evidence from eastern North America clearly reflects what Europeans would eventually record (Milner 1999). I can't decide whether some of the foregoing misplaced *opinions* are the products of self-enhancing anarchism, post-modern fadism, or simply some kind of an immature game of playing the Devil's Advocate. Any of the foregoing foibles would help to explain certain contradictory positions, such as all explanations should be 'testable' or 'provable' while observing "It is almost inevitable that all of our current interpretations of the past will one day be considered wrong..." (Ramsden 1990b:178). Knowledge is rarely a matter of black or white conclusions or finding absolute truths and attempting to improve the degree of probabilities of all aspects of research is a never-ending goal. The key word in any archaeologist's thinking should be "probability". The same can be said for all other disciplines.

With reference to European documentation regarding early 17th century native populations there have been blatant instances of ethnocentric bias. At this time period Europeans were tolerated as alien guests subject to the rules of the land. To view native people as naive individuals receptive to every European whim is to do great discredit to obviously intelligent and self-assured individuals. In terms of certain aspects of archaeological interpretation there is sometimes a refusal to accept the limitations inherent to the discipline. For example, after some qualifications, it is still observed, "However, the following estimate of Huron plant food composition assumes that the rate of plant food waste deposited on the middens is roughly proportional to the rate of plant food consumption" (Monckton 1992:84). The foregoing is a demonstrably unwarranted assumption given the random variables of plant preservation on archaeological sites, such as the total invisibility of materials not accidentally carbonised, the effects of plant food preparation and preservation such as dehydrating of squash, mushrooms and tubers and extracting nut meats from their shells, and consumption of different plant foods such as spring greens, all of which would leave no or little archaeological trace (D.Wright 1991:14-19). Despite the foregoing cautions, Monckton is undoubtedly correct in his *general* observation that non-cultigens played a major role in the Huron diet but unfortunately that role cannot be accurately quantified or qualified using either the archaeological evidence or the early French documentation.

Finally, there are certain limitations characteristic of both archaeological field and laboratory methods. As an example, it has been a common practice to use 1/4" (6 mm) screens to sift excavated back-dirt even though comparative studies of flotated back-dirt versus screened back-dirt clearly indicates a major loss of information resulting from the use of the latter technique. In a comparison of the two methods applied at the Bradley Ave. Neutral cabin site with a total of individual archaeological specimens of 544 only 9 came from the screening method (Lennox 1995a:Table 10). With reference to laboratory methods, the radiocabon dating method is too coarse-grained to establish a fine-grained chronology required for Iroquoian studies. Hopefully, recent attempts to correlate the radiocarbon chronology with a varve chronology (Finlayson 1998) will insert some refinement into chronological considerations including radiocarbon dating. Until such refinements can be demonstrated, however, it is more appropriate to use radiocarbon dates to establish calibrated date ranges rather than attempting to treat the median of such statistical ranges as absolute calendrical dates (Wright 1985; Pendergast 1993a; 1996).

The foregoing critical comments should not be construed of as a damnation of current archaeological practices. This section is intended to address the **Limitations in the evidence** and thus will naturally have a negative flavour. Much innovative work and interpretational break throughs have been made in Iroquoian studies in recent years. Hopefully these have been appropriately addressed in the body of this chapter. Certainly one of the most promising indication of advances is Finlayson's massive study of over 600 years of horticulture village evolution in the Niagara Escarpment area. This has advanced settlement pattern studies to the level of the study of communities. Isotope studies and advances in physical anthropological methods have all provided extremely valuable insights into the lives of past people. No one's work, however, should be exempt from *constructive* criticism and I most certainly include my own efforts in this respect. Indeed, I suspect that there will be some loud bellows directed at many of the observations made in this Chapter. Critical comment is an essential element in the advancement of knowledge as long as its goal is constructive. Rather, the foregoing comments are intended to draw attention to certain methodological, interpretational, and theoretical limitations in the archaeological literature. While there could be an element of the old boy criticizing some of the 'new boys' the foregoing comments are intended to be constructive and to point out certain perceived limitations in the archaeological data and interpretations. And, of course, there have been other heartening recent legislative developments, such as the passing of the Ontario Heritage Act and the Environmental Impact Assessment Act. Improvements, however, desperately need to be made in the area of both provincial and federal legislation. Provincial acceptance of its responsibility to curate and house archaeological collections and data resulting from CRM work is desperately needed as is a publication outlet for the information produced by CRM field work A start was made in 1990 when the Annual Archaeological Report, Ontario (AARO) was reinstituted to continue a publication process which began in 1887 but was terminated in 1928. An important role has been played by the Ontario Archaeological Society and its regional chapters. It has functioned as an effective merging of professional and amateur interests since its founding by Dr. J. Norman Emerson in the late 1940's. Its journal 'Ontario Archaeology' and the newsletter 'Arch Notes' as well as the publications of the chapters, particularly the London Chapter, have proven to be essential outlets for the dissemination of archaeological and physical anthropological information. There still are ongoing bureaucratic problems to overcome, however, such as the ineffectiveness of the provincial Cemeteries Act which has yet to face up to the difficulties involved with unmarked native burials and the need to establish an effective working relationship with native people, archaeology, and physical anthropology (Garrad 1994). Finally, more publications aimed at the public are needed such as Finlayson et al. 1987 and Williamson and MacDonald 1998. If the general public is not informed of the importance of the heritage work being done by archaeologists then there is little hope that legislators, politicians, and others in place of authority will act in appropriate ways. In short, archaeology desperately needs to sell itself.

CHAPTER 34

GLEN MEYER/WESTERN BASIN CULTURE

Précis:

As the title of this Chapter implies, there are serious problems of both ethnic differentiation and affiliation even at the broad level of the cultural constructs used in this work. The core problem is whether one or more cultures are involved. There is the further problem of ethnicity and whether all of the assemblages involved relate to Iroquoian- and/or Algonquian-speaking peoples. In the past, on the basis of similarities in technology, subsistence, and settlement patterns, the Glen Meyer villages west of the Niagara Escarpment were regarded as being Iroquoian. Indeed, Glen Meyer along with Pickering were classified as the Early Ontario Iroquois in the Ontario Iroquois tradition (Wright 1966). Glen Meyer as a cohesive cultural entity, however, disappeared around the end of the 13th century when Pickering people occupied their territory and absorbed and dispersed the original inhabitants. Considerable controversy has surrounded the Conquest Theory (Williamson 1990) despite evidence suggesting that it represents the most parsimonious explanation for the massive cultural changes which took place at the end of the 13th century west of the Niagara Escarpment (Finlayson 1998; Wright 1992). Given the 13th century disappearance of Glen Meyer the direct historical approach cannot be applied; a serious limitation when attempting to link an archaeological culture to a particular ethnic group.

Around the beginning of Period V, AD 500, it has been proposed that there were a number of geographically discrete hunting, fishing, and incipient horticultural communities from which Glen Meyer arose (Keenlyside 1978; Noble 1975a; Stothers 1977). These include the Princess Point complex in the Grand River-Hamilton area, the Point Pelee complex of Point Pelee on the north shore of Lake Erie, and a more poorly defined Ausable complex along the Ausable River emptying into Lake Huron. Collectively, these regional developments were referred to as the Princess Point complex. Subsequent studies have adopted the position that only the developments in the Grand River-Hamilton region eventually gave rise to Glen Meyer village life. Contemporary regional developments further west in Southern Ontario were then attributed to a Western Basin culture (Murphy and Ferris 1990). While it has long been recognized that there were close technological similarities between Glen Meyer proper and what has been call the Western Basin tradition of the Lake St.Clair region and adjacent Michigan and Ohio, what these similarities meant regarding cultural relationships is still being debated. Some see an in place development out of the Western Basin complex into the Fire Nation Confederacy of the early 17th century which was composed of Central Algonquian speaking people like the Kickapoo of Ohio and the Mascouten of Michigan (Murphy and Ferris 1990). Others, believe that the Western Basin cultural development was truncated around AD 1300 by an invading Mississippian culture derived Sandusky tradition with the remnants of Western Basin people fleeing to join their linguistic kinsmen, the Ontario Iroquois. The victorious Sandusky tradition people then went on to become the Fire Nation Confederacy described in the early French documents (Stothers 1981, 1999; Stothers 1994 et al). There is a morass of conflicting views regarding crucial matters such as cultural continuities/ discontinuities and linguistic affiliations. A major part of the problem is that, unlike the discrete Glen Meyer villages west of the Niagara Escarpment, the more westerly Western Basin sites, both in extreme southwestern Ontario and adjacent Michigan and Ohio, tend to be represented by multi-component occupations composed of mixed cultural deposits. Thus, arguments surrounding cultural developments and relationships had relied heavily on the comparison of pottery styles; a potentially hazardous interpretative crutch when used in isolation from other lines of evidence. While there are significant differences between Glen Meyer and Western Basin settlement patterns there is no question regarding technological relationships and some sharing of mortuary systems. Not all cultural systems, like technology, used here as abstract, convenient descriptive units within a broad concept of culture, neatly hang together. It may be recalled with reference to the St.Lawrence Iroquois considered in Chapter 32 that while villages in the upper St.Lawrence extending to the Québec City region shared a similar technology and a settlement pattern including longhouses, the subsistence practices of the two regions were significantly different being heavily horticultural to the west and more reliant upon hunting and fishing to the east. Similarly, attempting to decide whether Glen Meyer and Western Basin are one or two broadly envisioned culture patterns is a bit of an archaeological juggling act. The nature of the current archaeological evidence from Ontario and adjacent Michigan and Ohio does not particularly lend itself to even highly generalized cultural constructs. Despite some equivocation, I lean toward the view of a single culture possessing significantly different east-west aspects, not unlike the St.Lawrence Iroquois, which developed in place from a number of regionally differentiated groups at the beginning of Period V. It is further held that these developments terminated in at least some of the Central Algonquian-speaking communities historically documented as making up the Fire Nation Confederacy. However, I am still not entirely comfortable with trying to force a admittedly square peg into a round hole. Under the circumstances in this Chapter I treat Glen Meyer and Western Basin as separate entities which I categorize as complexes, an appropriately vague designation under the circumstances. The archaeological evidence is currently ambiguous with, for example, clear settlement pattern differences between the Glen Meyer village-fish camp pattern and the apparent seasonal and, for the most part, multi-component occupations to the west collectively considered under the Western Basin complex. When the picture becomes clearer the descriptive information contained in this Chapter can then be allocated to a more precise cultural assignment.

The Progenitors of the Glen Meyer Complex

There are two competing scenarios regarding the progenitors of the Glen Meyer complex. One scenario would see Glen Meyer arise directly from the Princess Point complex at the western end of Lake Ontario and the Grand River Valley whereas contemporary developments to the west between AD 500-1000 would lead to the Western Basin complex (Fox 1990; Murphy and Fox 1990). The other scenario views the development of the Glen Meyer complex as involving a number of regional but related developments pertaining to other geographical regions in addition to the Grand River Valley, such as Point Pelee, the Thames River Valley, Long Point, and the Ausable River Valley (Keenlyside 1978; Noble 1975a; Stothers 1977). At this point in time I favour the second scenario. Not only are the technologies of these regional developments during the first 500 years of Period V related but a multiplicity of geographically distinct developments terminating in the Glen Meyer complex more readily accommodates the increasing evidence of distinctive regional cultural variability within Glen Meyer itself (Timmins 1997; Williamson 1990). In addition to technology, mainly pottery styles, Glen Meyer and Western Basin shared a number of mortuary practices, the most conservative facet of any culture. Of course, cultural developments during AD 500 to1000 across Southern Ontario have a direct bearing on subsequent Iroquoian and/or Algonquian ethnicity debates. Indeed, given compelling evidence of cultural continuity it would be reasonable to rename the Princess Point complex Early Glen Meyer although there is some utility in retaining a distinct designation in order to emphasize the period of transition from a hunting and gathering economy to a horticultural one.

Sites of the progenitors of Glen Meyer, here collectively referred to as the Princess Point complex, in the main followed the hunting and gathering seasonal rounds of their Period IV ancestors. Most archaeological excavation has taken place in the Grand River Valley and environs and, therefore, it is not too surprising that it is from this region that the earliest evidence of corn horticulture has been identified around AD 500. The most parsimonious route for corn horticulture to diffuse into Southern Ontario would be from the southwest (Crawford et al.1997) and, therefore, it would follow that it is likely only a matter of time before early corn (*Zea mays*) is identified on contemporary sites to the west of the Grand River. There is also some tentative evidence for the development of a more permanent residency pattern prior to AD 1000 (Smith and Crawford 1997) suggesting that the increasing importance of corn horticulture was beginning to impose a degree of permanent residency in order to meet the requirements of clearing, planting, tending, and, to a lesser degree, harvesting the crop. It is likely that the evidence of permanent villages is too recent given the established horticultural village of Miller east of Toronto, estimated to date into the 9th century, which presumably acquired corn horticultural from the west. The nature of early corn harvesting is important as a number of Algonquian groups to the north and west of later Iroquoian populations and who were marginal horticulturists have been documented in the French records as abandoning their crops after planting only to return in the late summer to harvest what had survived the depredations of birds, animals, and drought. It is probable that the earliest horticulturalists passed through a similar balanced division of attention between cultigens and hunting and fishing and that, therefore, settlement pattern differences in many instances will probably not be striking.

While corn is the only cultigen to be identified to date from the early sites in the Grand River Valley it is likely that both squash and sunflower will eventually be recovered as both of these cultigens occur earlier in eastern North America than corn. Squash, for example, has been identified from sites adjacent to Southern Ontario in Michigan and Ohio dating to 500 BC (Shane 1967; H. Wright 1964) and a single sunflower seed (*Helianthus annuus*) was recovered from a feature dated to 600 BC at the Dawson Creek site on Rice Lake, Ontario (Jackson 1983). For a brief consideration of the evidence bearing on early plant domesticates in Ontario and surrounding regions see Wright (1999:639-641). Regardless of what cultigens came first, how early, and from where, the importance of the period between AD 500 and 1000 in Southern Ontario is the evidence of horticulture becoming an increasingly important economic factor in the lives of former hunters and gatherers. Hunting, fishing, and gathering would remain important but progressively only as adjuncts of a horticultural economy with all of its inherent cultural ramifications. This is what makes this period so important; it represents the transition from an ancient economy based upon the seasonal exploitation of a range of resources to one increasingly reliant upon horticultural products. Horticulture requires unique settlement strategies as well as major social adjustments, including a division of labour whereby women replace men as the major food producers. This process was undoubtedly complex with numerous regional facies and its archaeological elucidation is only beginning.

The Glen Meyer Complex

When the Ontario Iroquois tradition was first proposed it was based on archaeological evidence dating from approximately AD 1000 to the early 17th century when the French missionaries and explorers documented information pertaining to its descendants, the Huron Confederacy and, to a lesser extent, the Tionnontaté immediately west of the Huron at the southern end of Georgian Bay and the Neutral Confederacy to the south between the western end of Lake Ontario and the Grand River. Two Early Ontario Iroquois branches, physically separated by the Niagara Escarpment, were proposed. These were Pickering to the east and Glen Meyer to the west (Wright 1966). The Middle Ontario Iroquois stage was believed to have been initiated by two developments, the continuing evolution of elements of Pickering east of the Niagara Escarpment and the late 13th century conquest, absorption, and dispersal of the Glen Meyer people to the west of the Escarpment by Pickering forces. It has been speculated that elements of Pickering society were capable of organizing effective military confederacies involving a number of villages and that, on the assumption Glen Meyer society had not developed to the same level, the former were able to overwhelm their opponents through sheer number of warriors (Wright 1992). While there is considerable controversy surrounding the Conquest Theory it still appears to be the most reasonable explanation for the massive cultural changes which took place west of the Niagara Escarpment in the late 13th century. The proposition that the Glen Meyer communities were absorbed and scattered, ceasing to represent an intact culture which survived to the time of European contact, means that the Direct Historical Approach cannot be applied to them. This approach, after identifying historically documented villages, can provide vital information on language and other aspects of culture which cannot be teased out of the archaeological record. Said villages, with European trade goods, are then compared to other sites in the area lacking such goods but possessing the same indigenous technology, settlement systems, and other facets of culture. The assumption is then made that the latter sites represent the pre-European sites of the later populations described by Europeans. It can thus be seen that the approach requires the historical documentation of sites which, of course, could not be done for the Glen Meyer complex. Initially, it was simply *assumed,* on the basis of settlement patterns, general technology, and other facets of culture, that the Glen Meyer people were Iroquoian. This assumption was not justified in lieu of the application of the Direct Historical Approach and thus the ethnicity of the Glen Meyer complex has currently become a matter of debate. To resolve this debate a judicious application of what could be called the Indirect Historical Approach will be necessary.

Glen Meyer subsistence was based upon a mix of horticultural products and foods acquired through hunting, fishing, and gathering. With the recent advent of the archaeological field method of collecting soil samples from features and flotating the soil in order to acquire both microscopic and macroscopic materials a much wider range of plant remains, both domesticated and wild, have been identified than in the past. At the Calvert site, for example, corn (*Zea mays*), squash (*Cucurbita pepo*), sunflower

(*Helianthus annuus*), bean (*Phaseolus vulgaris*), and tobacco (*Nicotiana rustica*) were all identified along with a wide range of gathered fleshy fruits and grains/greens (Timmins 1997:97-102). Beech (*Fagus grandifolia*), sugar maple (*Acer saccharum*) and white elm (*Ulmus americana*) were the obviously preferred fire woods as all provide relatively high btu's and are not prone to throwing sparks, the latter being an important consideration for people living in bark sheathed dwellings.

Burial information regarding the Glen Meyer complex is quite variable and, in this respects, resembles the limited evidence pertaining to the Princess Point complex. At the nearly completely excavated Calvert site no human remains were encountered while at the completely exposed Elliot site only the discarded elements of four individuals were encountered at the village edge. Occasional single primary and/or secondary burials have also been recorded. Exceptions to the rule are the Praying Mantis site, where eight secondary, partially complete burials and one exhumed primary burial, were encountered and the eight secondary burials from the Force site. Burials isolated from settlements have also been identified (Spence 1994:Table 1). The existence of true ossuary burial consisting of a number of secondary burials being placed in a common grave pit is still a matter of debate. A candidate is the 10th century Rogers Ossuary in Brantford (Mullen and Hoppa 1992) which contained 28+ individuals. However, there are no notes from the 1930's excavation but photographs taken at the time suggest some articulation of the bodies and, thus, it is uncertain whether the grave contained primary or secondary burials or a combination of the two burial methods. Similarly, information on the Middleport site ossuary (Wintemberg 1948) is limited and the grave could pertain to either the Princess Point complex occupation of the site or the 14th century Iroquoian occupation although the inclusion of grave offerings would favour the former assignment. Ten fragments of adult human bone, some charred, were reported as being widely distributed in the refuse of the VanBesien site and were interpreted as evidence of prisoner sacrifice and cannibalism (Noble 1975a:42). Convincing evidence of prisoner sacrifice, however, is rare on Glen Meyer sites.

Between the 10th to late 13th centuries the Glen Meyer complex occupied Southern Ontario west of the Niagara Escarpment with site clusters at the western end of Lake Ontario, the Grand River Valley, along portions of the north shore of Lake Erie, on the upper reaches of the Thames River, and the Ausable River (Williamson 1990: Figs.9.1 and 9.2). With the exception of Point Pelee on the north shore of Lake Erie just east of Windsor the distribution approximately duplicates the locations of earlier Princess Point sites (Stothers 1976: Fig.1). The earliest definite village is the 10th century Porteous site in Brantford on the Grand River. The site is clearly transitional with some classifying it as Glen Meyer (Noble and Kenyon 1972) and others as Princess Point (Stothers 1976) although all of these researchers recognize that the site was transitional from Princess

Point to Glen Meyer. The Porteous site is now generally accepted as being Glen Meyer although the cut-off point is admittedly arbitrary. Surrounded by a closely spaced double stockade, partial excavation of the 0.15 ha site exposed at least five dwellings including at least one instance of overlapping structures indicative of the sequential occupation so typical of later villages (Stothers 1976:161). The structures at this site anticipate many characteristics of later Glen Meyer villages. Longhouses tend to be short and narrow with lengths ranges from 9 to 12 m and widths of 6.7 m while hearth floors are both centrally aligned in a corridor and off-centred. Also present were special purpose or otherwise distinctive structures, such as a 5.5 m circular dwelling with a single hearth and pits, and a rectanguloid structure with what appears to be an asymmetric lateral porch (wood storage?). Middens were situated outside of the stockade. Many of the foregoing village settlement features were represented in the three major building stages of the early 12th to mid-13th century Calvert site (Timmins 1997) and the 13th century Elliott site (Fox 1986a).

Glen Meyer technology is dominated by pottery vessels, usually decorated with cord-wrapped stick and linear stamp impressions and often possessing a single line of both exterior or interior bosses. Castellations on generally collarless or incipient collared rims are common. Pottery pipes of small and relatively crude manufacture are never common and are most often plain although punctated and cord impressed specimens do occur. Occasional black soapstone pipe fragments probably represent survivals from an earlier period. The bone tool industry is poorly developed consisting mainly of utilitarian objects like awls, rodent incisor knives and chisels, and conical antler arrowheads. Chipped stone is represented by triangular arrowheads and, in particular, a wide range of scraper varieties. Celts, abraders, anvil stones, slate pebble pendants, and other sundry items have low frequencies. Evidence of far flung trade in the form of marine shell ornaments and native copper items are exceedingly rare. Indeed, any kind of external relationships appear to have been quite limited and one is left with the impression of relatively parochial communities developing in partial isolation from one another.

The transition of Glen Meyer out of Princess Point provides an exceptional record of the impact of the progressive adoption of a horticultural economy. This economic transition, beginning around AD 500, had by the 10th century resulted in year-round occupied fortified villages containing multi-family longhouses. It was the settlement patterns that were most affected by the transition from hunters and gatherers with some minor horticulture to communities who were so dependant upon their crops that sedentary residence of large groups of people became mandatory. While the seasonal fishing locales of the ancestral Princess Point complex were maintained it was now in conjunction with interior villages as well as a range of special purpose interior sites (Williamson 1986).

The Progenitors of the Western Basin Complex

The Western Basin complex is believed to have originated from a widely distributed Middle Woodland cultural base in the southwestern extreme of Southern Ontario in the Lake St.Clair region and adjacent Michigan and Ohio. Controversy surrounds just about every aspect of the Western Basin complex, in large part due to the complex being heavily based upon pottery styles derived from multi-component sites. The first synthesis of the Western Basin complex in Ontario observed that it represented an "...in situ cultural developments out of the earlier local Middle Woodland occupations who maintained a presence in southwestern Ontario until some time between A.D. 1550 and 1600. These people are interpreted as being distinct from Iroquoian populations to the east, and Mississippian groups to the south..." (Murphy and Ferris 1990:189). It is further stated that their descendants were Central Algonquians.

The early portion of the Western Basin development has been called the Riviere au Vase phase and is equated here with the Princess Point complex of AD 500 to 900-1000. While differences exist Western Basin pottery shares a number of attributes with contemporary Princess Point pottery. Surface treatments in both pottery assemblages are invariably cord malleated or fabric impressed with decoration of the collarless rims normally executed with cord wrapped stick impressions although parallel rows of oblique dentate stamp and impressions made with the suture edge of a turtle shell are also common as are a single exterior row of punctates which raise interior bosses. Castellations, the peaked elevations along the rim lip, become increasingly common as do complex triangular and rhomboid motifs executed on carefully smoothed necks, a common feature of later pots. Many of these vessels are essentially indistinguishable from Princess Point specimens. Pottery pipes are present but rare. Corner-notched chipped arrowheads with clear Period IV prototypes are common but are replaced through time by broad triangular arrowheads. Biface knives, drills, a range of scraper forms, celts, slate pendants, and chipped and ground slate knives made up the lithic industry; an industry, it might be added, which is widely distributed across eastern North America and, thus, is of little use in distinguishing local cultural developments from one another. The bone tool industry can best be described as nondescript.

Settlement patterns and subsistence practices are best revealed at Point Pelee where a series of warm weather hunting-fishing camps located in marsh-lake environments have been investigated (Keenlyside 1978). A diffuse exploitation pattern is apparent with a wide range of species being represented. Fishing was of obvious importance but evidence of horticulture is lacking. Mortuary practices during this time period are largely unknown. Only the unpublished Clarke burial site on Point Pelee likely pertains to the period in question. I participated in this salvage excavation in 1952 which involved two separate graves containing multiple primary burials and, in one instance, a secondary bundle burial. An arrowhead lodged in the spinal column of one of the bodies points to community hostilities; a possibility also suggested by certain fracture patterns and the fact that the deceased were all women, infants, and children with the exception of one elderly male. Marginella beads, which once would have fringed clothing, suggest that earlier trade networks were still in place, albeit in an attenuated form.

The absence of corn from early Western Basin complex sites is not particularly surprising given the limited number of sites investigated and the fact that they pertain to warm weather hunting and fishing rounds. Extensive excavation and flotation was required on Princess Point sites on the Grand River to clearly demonstrate the presence of corn. More important at this time period is the evidence of technological, settlement pattern and subsistence similarities across Southern Ontario. With reference to the eastern and western expressions of the Princess Point complex while there is apparent cultural continuity into later developments these developments did take significantly different directions.

The Western Basin Complex

From approximately AD1000 on the communities making up the Western Basin complex in southwestern Ontario take a significantly different direction from that of the contemporary Glen Meyer communities to the east. The area around Lake St.Clair is a richly endowed temperate Deciduous Forest vegetation province (McAndrews et al. 1987) with an abundance of fish, animal, and plant resources. In short, it was an ideal locale to maintain the seasonal hunting, gathering, and fishing practices of the past and this may possibly account for why communities in the region did not apparently adopt corn horticulture to the same extent of their eastern Glen Meyer neighbours. At least not to the extent apparent from the archaeological evidence of settlement patterns and subsistence. For the most part, large sites continue to be warm weather seasonal sites exploited by many generations of people. Probable winter sites have been identified but they are few and far between. It is difficult, if not impossible, to unravel the various occupations at such sites and, therefore, even the convincing demarcation of house structures is a rare event as is the establishment of the relationship of pit features to stockades and other features. Scattered Western Basin sites have been recorded along both sides of Lake Huron, in one instance stratigraphically below a mid-14th century Ontario Iroquois occupation (Kenyon 1959) while another site in the same area has been dated to the 10th century (Fox 1990:Table 6.1). Though Western Basin continues to share many elements of technology with contemporary Glen Meyer communities their settlement patterns are distinctly different. Indeed, instead of year-round villages with sequential building stages spanning eight or more decades Western Basin settlement appears to have mainly involved warm weather camps along lake shores and major rivers seasonally occupied over hundreds of years. Winter dispersal of families into the interior, leaving little archaeological record, appears to have been the norm. Even though corn horticulture did become increasingly important through time it appears that the Western Basin people clung more tenaciously to the old ways than their environmentally less favourably endowed eastern neighbours. In addition to elements of technology, relationships between Western Basin and Glen Meyer are, however, apparent in certain settlement features such as the typical large storage pits of Western Basin occurring both in and outside of the houses of the western-most Glen Meyer villages. Certain mortuary features were also shared, such as isolated cemeteries, cemeteries associated with seasonal fishing camps, and the common occurrences of individuals only being represented by the skull and some of the larger bones with presumably the remainder of the body being left at the original grave site. Charnel houses also appear to be a shared trait although there is still only limited evidence for this for both Glen Meyer (Woodley 1993) and Western Basin (Greenman 1937). Absent from Glen Meyer, except for a drilled mandible from the Praying Mantis site, is the cutting of plaques and drilling of holes into the skulls of the deceased as well some modification of the articular elements of the longbones; all traits which have a much wider distribution than Western Basin occurring as they do at the juncture of the Upper Great Lakes (McPherron 1976) and elsewhere. Indeed, this distinctive postmortem treatment of the deceased obviously represents a survival from the Hopewell Mortuary Complex of Period IV.

Around the end of the 13th century momentous events took place in Southern Ontario. In addition to the proposed conquest of the Glen Meyer people by their eastern Pickering neighbours, sudden changes are evident in Western Basin territory. David Stothers has long held that these changes reflect the replacement of the Western Basin population by a Mississippian derived Sandusky tradition (Stothers et al. 1994). In this scenario the Western Basin refugees flee to their supposed linguistic and ethnic kinsmen, the Ontario Iroquois. A major weakness in the proposal is that the Glen Meyer so-called kinsmen no longer existed as a cultural entity and may not have even been Iroquoian in the first place. An alternate scenario is that the Western Basin continued to develop in place into the Central Algonquian Fire Nation documented in the early 17th century (Murphy and Ferris 1990). Although I currently would favour an in place development of Western Basin into some of the Algonquian groups making up the Fire Nation Confederacy, the archaeological evidence is simply too weak in both context and cohesiveness to be overly emphatic. Indeed, the various scenarios are all too driven by pottery styles being enshrined with ethnic labels. For example, a major marker of the Springwells phase of the Western Basin complex is the sudden appearance of horizontal motifs on collared rims executed with a push-pull decorative technique; an innovation attributed to a widespread design horizon across much of eastern North America (Murphy and Ferris 1990:209). An alternative and more parsimonious explanation for the sudden appearance of these distinctively Pickering and Middle Ontario Iroquois pottery traits would be the Conquest Theory whereby some of the pottery could either represent the products of captive Middle Ontario Iroquois women or actual occupations of earlier Western Basin sites by eastern intruders. It has been recognized that cultural-historical models, regardless of inherent weaknesses, are part of a necessary primary process to be subjected to continuous testing and modification (Stothers 1999) but we are most definitely still in a very preliminary testing mode.

Cultural origins and descendants:

The Princess Point complex, ancestral to Glen Meyer and, in a related form, to the Western Basin complex, has produced evidence of corn horticulture at AD 500 in the Grand River Valley (Smith and Crawford 1997; Stothers 1977). It was initially proposed that Princess Point was intrusive into Southern Ontario, apparently lacking earlier local antecedents (Stothers 1977:155-158). This hypothesized southwestern Hopewell-derived cultural penetration, largely premised on pottery styles and assumptions regarding the origins of early corn horticulture, has been rejected by researchers favouring an in place development despite the lack of much supporting evidence (Fox 1990:185). Basing population movements on pottery styles in conjunction with assumptions regarding the northward spread of corn horticulture is shackled by some serious limitations. For example, the typical Princess Point cord malleated pottery vessel with cord-wrapped stick rim decoration and an encircling row of exterior punctates producing a corresponding interior row of bosses, has contemporary equivalent pottery forms extending from Manitoba and Saskatchewan to the Atlantic Coast and adjacent states. A widespread horizon style change, the cord-wrapped stick decorative technique suddenly replaced the earlier dentate stamp horizon style in popularity. Consideration of all the local pottery attributes involved, in conjunction with other elements of the technology as well as other cultural systems and not just one aspect of technology, would be a safer yardstick for evaluating cultural continuity versus discontinuity and, thus, migration versus in place development. This has yet to be done in a convincing manner relative to any Period IV Saugeen complex transition into Princess Point or from the poorly defined Couture complex (Murphy and Ferris 1990:195).

Continuity from Princess Point into Glen Meyer, at least in certain areas, has been demonstrated (Noble and Kenyon 1972). Similar regional continuities from related assemblages, such as at Point Pelee, into regional expressions of Glen Meyer will likely also be eventually demonstrated. Indeed, William C. Noble, who restricted the designation "Glen Meyer" to formal village life beginning with the Porteous site, was an early advocate of the multiple origins of Glen Meyer (Noble 1975a:50). Such would appear to be the case with the Varden site on the north shore of Lake Erie where a transition from Princess

Point into Glen Meyer between AD 500 and 1000 is evident (MacDonald 1986). Technological similarities between Glen Meyer and Western Basin, particularly with reference to pottery characteristics, have long been recognized (Fitting 1970; Stothers 1975). Striking distinctions between Glen Meyer and Western Basin, particularly with reference to settlement patterns and differing emphases in subsistence, however, existed during the 11th to late 13th centuries. Thus the relationship between these two complexes comes down to a matter of personal interpretational inclination and emphasis. Do technological parallels and, to some degree, correspondences in mortuary practices, outweigh the differences in settlement patterns and subsistence?

Correlating with the disappearance of the Glen Meyer complex in the late 13th century were major changes in the Western Basin complex. Some would argue that these changes simply reflect pottery horizon style introductions within an otherwise in place cultural development which resulted in the Central Algonquians identified as the Fire Nation Confederacy of the early 17th century (Murphy and Ferris 1990). Others would argue that the Western Basin complex was truncated around AD 1300 by an alien Mississippian population coming out of the south, the Sandusky tradition (Bechtel and Stothers 1993:96; Stothers et al. 1984; 1994), and that it was these people who became the Fire Nation recorded at the time of European contact. Remnants of the Western Basin complex were believed to have then been absorbed by their linguistic and cultural kinsmen, the Ontario Iroquois. The French recorded in the17th century how the Neutral and their Tionnontaté and Odawa allies were locked in combat with the Fire Nation or, more likely, tribal elements of the Fire Nation confederacy. Archaeological evidence has recently demonstrated that only the northern Neutral tribes of the Neutral Confederacy were involved in the conflict (Lennox 1981), a fact which emphasizes the complex and variable nature of how such confederacies functioned. Another scenario, the one favoured here, can be added to the preceding opposing scenarios. Namely, that with the destruction of the Glen Meyer communities by their eastern Pickering-derived Middle Ontario Iroquois neighbours, some Glen Meyer people were adopted by the conquerors while others fled westward to join their Western Basin Algonquian kinsmen bringing with them Iroquoian captive women who introduced Iroquoian pottery styles to the region. As most of the post AD 1300 Western Basin sites are multiple components with a considerable cultural mixture there is also a possibility that some of the eastern pottery styles, namely horizontal motifs executed in the push-pull decorative technique, represent actual Ontario Iroquois occupations of former Western Basin seasonal sites. The foregoing differing scenarios have been premised upon pottery styles given that so much of the non-pottery technology falls within a widespread pattern that is of little use in distinguishing between regional groups. Differing interpretational biases also influence even those instances where good archaeological contextual evidence exists. Excavation of the Butler site in Detroit, for example, exposed a number of refuse pits containing a mixture of Western Basin, Glen Meyer, and Middle Ontario Iroquois pottery styles, which, given the contexts, clearly had to be contemporaneous. The assemblage has been identified as a late Western Basin complex occupation (Stothers and Pratt 1981:Fig.5, A&B) but I would add that the evidence clearly indicates the incorporation of Glen Meyer refugees into a Western Basin community along with some evidence for the presence of Middle Ontario Iroquois women captives.

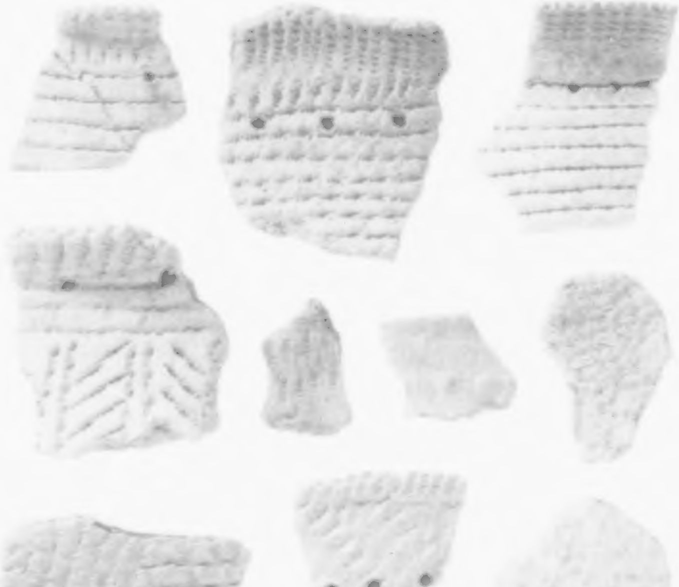
As can be seen from the foregoing quite different opinions regarding cultural continuity versus discontinuity and ethnicity have been derived from essentially the same data base. For example, while David Stothers and I can agree that momentous cultural changes took place around the beginning of the 14th century we would disagree on both the underlying causes of change and their ethnic affiliations. There is no doubt that the scarcity of good single component Western Basin sites in Ontario, Michigan, and Ohio has contributed to the diverse interpretations of the evidence. There is a further area of controversy. It has been proposed that the Lake St.Clair-Detroit River region was the centre of development of the Western Basin complex (Stothers and Bechtel 2000:38). There is little evidence to suggest that this area was some kind of core region of development. Regrettably, a majority of key archaeological sites were likely destroyed in the 19th and early 20th centuries by urban activities associated with the cities of Detroit and Windsor.

There is much to recommend the view that the Middle to Late Woodland transition be viewed as a number "...of regional continua with broad-based, extra-regional interaction" (Smith 1997b:63) although I would question the wisdom of accepting vaguely defined constructs like Couture culture or the suggestion that calibrated radiocarbon dates are a sufficiently fine-grained chronological method to permit the identification of contemporary Middle and Late Woodland distinct societies. The transition from Middle Woodland to Late Woodland was not a simple, unilinear development with clear cultural continuity through time (Fox 1990). For example, the nearly complete replacement of coiled pottery construction by the paddle and anvil method or the switch from dentate decorated pottery to cord-wrapped stick impressed varieties were erratic processes which occurred in different areas at different times and, thus, represent changes of degree and not necessarily of kind. In essence, the observation that "Evidence therefore for either the migration hypothesis or for Princess Point "in situ" development and cultural continuity is tenuous at the best" (Ibid:186) is still valid.

Technology:

Princess Point and Related Complexes

Pottery styles essentially define the Princess Point complex and its regional expressions. Spanning the period between AD 500 and 1000 and undoubtedly earlier,



BLACK AND WHITE PLATE LI: PRINCESS POINT COMPLEX POTTERY FROM THE LOWER LEVELS OF THE MIDDLEPORT SITE These typical sherds were recovered from the lower levels of the site beneath the major 14th century Middle Ontario Iroquois village site debris. (Reproduced from Wintemberg 1948: Plate XI - Scale, the lower right hand specimen is12 cm in height)

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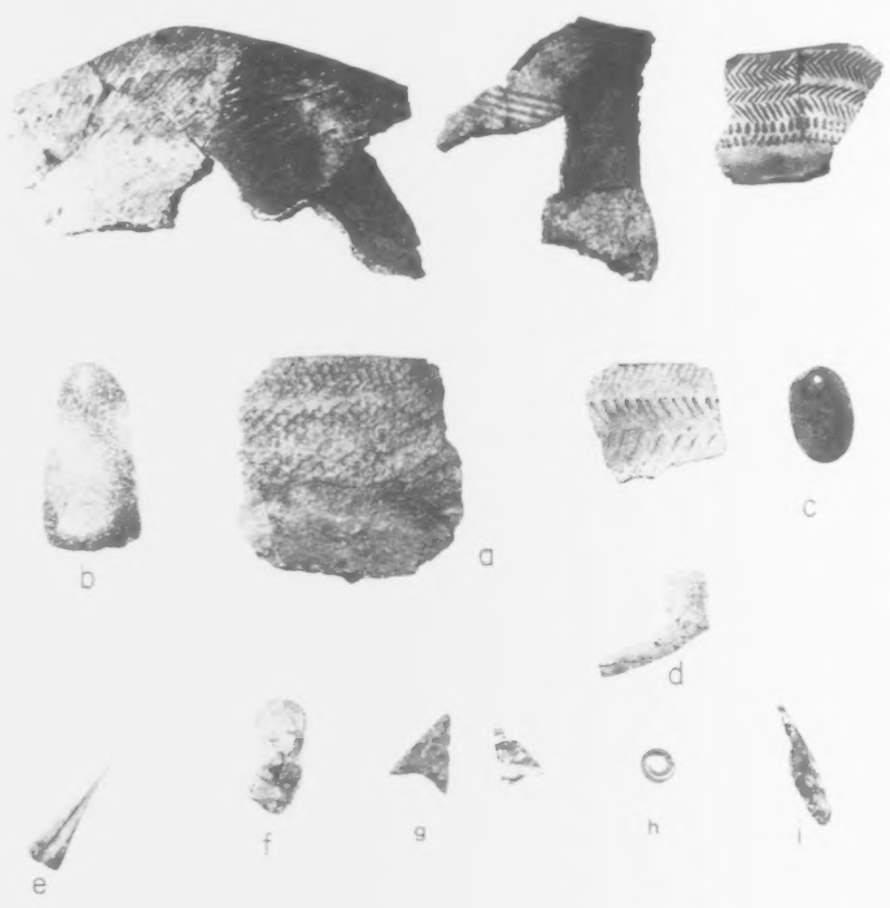
vessels are generally globular in shape with everted, collarless rims. Vessel bodies are invariably covered with cord malleation or twined fabric impressions, frequently being partially obliterated by a final smoothing of the vessel surface. Decoration usually consist of cord-wrapped stick impressions on the rim area with an encircling row of external punctates which raised interior bosses. Incipient elevations of the rim lip, called castellations, are common and the lip and the interior rim edge are generally decorated with cord-wrapped stick impressions. A common motif is one or more rows of obliques over horizontals. Small, plain and decorated smoking pipes are both rare and crudely modelled. Regionally less distinctive are the broad triangular and occasional corner-notched, side-notched, and stemmed arrowheads, ovate bifacial knives, drills, flake scrapers and, less common stone tools such as celts, hammerstones, anvilstones and notched net sinkers; the latter being particularly common on fishing stations where they are indicative of the use of the gill net. While utilized chert flakes are common, formal chipped or ground stone tools are rare. Both the bone and shell tool inventories are weakly developed. The most common bone item from the early Point Pelee sites were fish spine needles with fire-hardened tips (Keenlyside 1976:200). Evidence of the partial retention of earlier trade networks, such as marginella shell beads from the Atlantic Coast, are often encountered on the earlier sites.

The Glen Meyer Complex

The Glen Meyer complex was first identified as a distinct assemblage in Southern Ontario west of the Niagara Escarpment by Thomas E. Lee (Lee 1951; 1952) but was not systematically described until later (Wright 1966). The technology is dominated by pottery, pipes are small, generally crude and rare. Triangular arrowheads are the dominant form although notched and stemmed varieties also occur. Flake scrapers and end scrapers are common as are ubiquitous expedient flake tools. Bifacially flaked knives occur in a number of forms along with spokeshaves, drills, flint strike-a-lights, adzes, abraders, hammer and anvil stones, and small black slate pebble pendants. The bone industry is weak, consisting mainly of awls and beads. Evidence of twined fabrics is evident from pottery impressions which preserve a negative image of the fabric. Implements manufactured from wood, bark, and hide would have originally dominated the technological inventory. In just about every respect the Glen Meyer technology reflects its Princess Point ancestry. Pottery styles, however, do change. At the transitional 11th century Porteous village site (Noble and Kenyon 1972) pottery decoration was still dominated by cord impressions but exterior bossing appears along with other new traits. Clear continuities exist relative to pipe styles and the stone tool industry. The Van Besien site is a later Glen Meyer village in the same region as the Porteous site (Noble 1975a). As usual, pottery dominants the assemblage. Unlike the Porteous site pottery, however, the linear stamp technique has become more popular than the cord-wrapped stick decorative technique. Incising also increases in popularity (Ibid:Table 2). Lip and interior rim decoration decrease dramatically in frequency while exterior bossing replaces interior bossing in popularity. A number of other attribute changes from early to middle Glen Meyer are apparent. The simple right angled and obtuse angled pottery pipes are few in number and tend to be plain or with punctate impressions. A steatite pipe bowl probably represents a hold over from an earlier time. Seventy percent of the formal stone tools were scrapers, mainly simple flake scrapers although large, distinctive stemmed end scrapers are also common and these increase in size through time (Noble 1975a:30). Triangular arrowheads were preferred over other forms, often with a single distinctive elongated basal corner barb. The usual low frequencies of bifacial flaked knives, celts, abraders, wedges, drills, and other lesser items are consistent with other sites (Ibid:Table 16). A rare but apparently distinctive ground slate knife with a concave cutting face is reported and compares closely with a specimen from a ceremonial feature at the Glen Meyer Calvert site (Timmins 1997:122) and another from the early Middle Ontario Iroquois Uren site (Wintemberg 1928). As is the norm, the bone industry is weak being mainly represented by awls, worked rodent incisors, and conical antler arrowheads. Unusual objects are a drilled turtle shell rattle and a beamer, the latter being a tool used in hide preparation.

The single most detailed published study on a Glen Meyer village site is the Calvert site report (Timmins 1997). This sequentially expanded village is estimated to have been occupied from the 12th century and the first half of the 13th century and, thus, is relatively late in the Glen Meyer sequence. The site is one of a number of Glen Meyer sites near London on the Thames River drainage. A lengthy period of occupation also permits some consideration of local temporal trends although there were difficulties in isolating the artifacts from the Early, Middle, and Late occupational phases. Pottery dominated the assemblage and consisted mainly of outflaring, collarless vessels with exterior bossing being more common than interior bossing. Little in the way of significant temporal trends are apparent with reference to either vessel morphology or decorative techniques and motifs (Timmins 1997:Fig.7.10 and 7.11) reinforcing the impression of a locally conservative pottery tradition. When decorative techniques are considered collectively and compared with other Glen Meyer sites there are obvious regional differences although a temporal factor may also be involved in some of these differences. At the Van Besien site, some 25 km to the east of Calvert, there are striking differences. In terms of pottery



BLACK AND WHITE PLATE LII: GLEN MEYER COMPLEX ARTIFACTS The illustrated objects are as follows: (a) five rim sherds with typical motifs in linear stamp, cord-wrapped stick, and a distinctive crescent form of dentate stamp; (b) a polished stone adze; (c) a drilled black slate pebble pendant; (d) a plain pottery smoking pipe; (e) a bone awl; (f) a distinctive thick stemmed end scraper; (g) typical triangular arrowheads; (h) a native copper ornament; and (i) a drill. (Reproduced from Wright 1972b, Plate 15 - Scale: the drill in the lower right hand corner is 6.2 cm in length)

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decoration the dominate techniques at Calvert are cord-wrapped stick followed by linear stamping while at Van Besien linear stamping closely followed by incising, are the dominant methods of decoration (Timmins 1997:Table 8.5). Similarly, interior punctating, with or without associated exterior bosses, had almost doubled in frequency at the Calvert site compared to Van Besien. Significant non-pottery differences between Calvert and Van Besien consisted of a scarcity of scrapers at the former site and their dominant position in the stone tool industry at the latter site. As usual, the bone industry is weak, being dominated by awls. Worked rodent incisors and conical antler arrowheads, so common at Van Besien, are either absent or in low frequencies at Calvert. Unfortunately, a number of the samples pertinent to possible temporal changes are simply too low to be given much weight. Such temporal changes, masked to a degree in mixed samples, is a worrying factor. There can be little doubt, however, that as site samples increase and their contexts are better controlled, fine-grained studies are going to demonstrate considerable regional technological variability within the various geographic site clusters making up the Glen Meyer complex.

The Western Basin Complex

The Western Basin complex is characterized mainly by seasonal sites rather than the year round occupied villages of the Glen Meyer complex. Sites tend to be located on the lower reaches of rivers draining westward into Lake St.Clair and in the Point Pelee region (Murphy and Ferris 1990:Fig.7.1). Outlier sites are found along the Lake Huron coast as far north as the Bruce Peninsula in the Georgian Bay region and include one component containing the distinctive pottery, side-notched arrowheads and large slate scraping and cutting tools stratigraphically situated under a mid-14th century Middle Ontario Iroquois occupation (Kenyon 1959). Unfortunately, various pottery styles, often coming from unclear archaeological contexts, have formed the basis for most chronological estimates. On this basis, around AD 1000 Western Basin pottery with "...generic relationships to the Iroquoian material of southwestern Ontario..." (Brose and Essenpreis 1973:169) is characterized by frequently castellated collars decorated with linear stamp and cord-wrapped stick motifs followed by the crescent stamp form of dentate also found on Glen Meyer sites and a regionally distinctive technique of impressing the design into the collar by means of a twisted cord which was *not* wrapped around a stick. From the early 14th to 16th centuries another distinctive pottery style appears consisting of ornamental applique strips of clay (Fitting and Zurel 1976). It has been suggested that the aforementioned clay strips were produced by using the natural longitudinal groove in a split deer canon bone (Kroon 1972:216). Early in the sequence vessel necks are often carefully smoothed to receive a motif consisting of incised rhomboids and triangles filled with stamped designs (Murphy and Ferris 1990), a minor trait on Glen Meyer vessels. While shell tempering of pottery vessels appears as early as the 15th century it does not become common until the late 16th and early 17th centuries. At the early 17th century Neutral Hamilton site, for example, pottery vessels brought to the site by captured Fire Nation women were characteristically shell tempered, cord malleated vessels with carinated shoulders decorated with punctates. Oblique and double vertical rows of appiqued and decorated strips frequently appear on these mainly collared vessels, some with pedestalled feet (Lennox 1981:tables 54>)

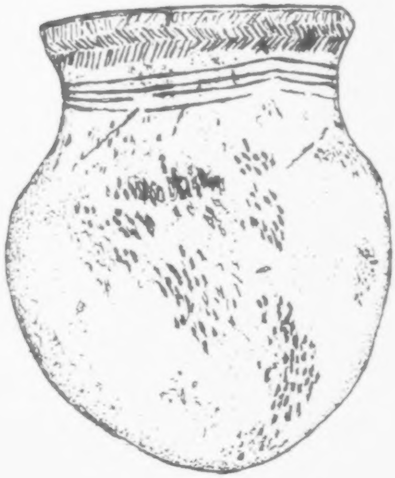
A 1 ha, 12th century site, believed to represent a winter occupation, is one of the most informative Western Basin sites excavated to date. The Bruner-Colasanti site (Lennox 1982) is located 4 km from Lake Erie on the headwaters of a river emptying into Lake St.Clair. Surfaces of pottery vessels, ranging from 5.5 to 15.0 litre capacities, were generally roughened with cord or fabric impressions. Rims are everted, frequently castellated, and generally lack collars with the decoration being mainly executed with linear stamp, the crescent stamp form of dentate, and cord-wrapped stick. Motif filled triangles and rhomboids frequently occur on a carefully smoothed neck area while, as a rule, rim decoration is either lacking or consists of a row of oblique impressions. Pottery pipes were rare and the bone tool industry weak. The stone tool industry consisted mainly of flakes and cores. Formal stone tools were limited to bifacially flaked knives and a minor number of arrowheads and scrapers. Both the knives and scrapers were mainly of large slate objects unlike equivalent tools from contemporary Glen Meyer sites. Anvil stones were common and often associated with pit features producing hickory nut fragments, supporting the suggestions that these implements were nutting stones (Waugh 1916:185). Indeed, three-quarters of the wood charcoal identified from the site came from nut-bearing trees like oak, hickory, beech, and chestnut.

	Parker Earthwork		**Lawson**	
	f	%	f	%
Rims	203	69.5	1840	54.2
Pipe bowls	53	18.2	194	5.7
Stone arrowheads	15	5.1	100	2.9
Biface knives	5	1.7	23	0.7
Celts	2	0.7	53	1.6
Bone awls	10	3.4	405	11.9
Turtle carapace cups	3	1.0	-	-
Shell knife	1	0.3	261	7.7
Other	-		521	15.3
TOTAL	**292**	**99.9**	**3397**	**100.0**

TABLE 27: A COMPARISON OF THE *EQUIVALENT* TOOL FREQUENCIES FROM A WESTERN BASIN COMPLEX SITE AND A CONTEMPORARY NEUTRAL ONTARIO IROQUOIS SITE The total of artifact categories from the Parker Earthwork site is presented but only the equivalent tool categories from the Lawson site drawn from Table 26 are provided. Lawson site categories absent from the Parker Earthwork are lumped under the

category 'Other'. Only a rim count was available from the Parker Earthwork while the Lawson site figure pertains to vessels, thus the former frequency in somewhat inflated, likely to somewhere in the area of 15% less than that implied by the above percentage. It should be noted that the majority of the pipes from the Parker Earthwork are Iroquoian varieties and that the ratio of rims to pipes is 3.8:1 from the Parker Earthwork compared with a ratio of 9.5:1 from the Lawson site.

The 16th century Parker Earthwork (Lee 1958) and Weiser (Kroon 1974) sites are both surrounded by earthworks. As will be discussed in the section on **Settlement patterns** their function as normal villages is questionable. Of the 144 vessels from the Weiser site most were grit tempered with only nine percent being shell tempered. All of the pots lacked collars and most were ornamented with applique strips although plain, corded, and lip edge modified examples were also present (Stothers et al. 1984). A comparison of the Parker Earthwork site and the contemporary Neutral Iroquois Lawson site technologies is informative. Both sites contained minor percentages of each others distinctive pottery suggesting both contemporaneity and the likelihood that their relationship was less than cordial if the alien pottery is interpreted as the product of captive women. Even given the limitations in the samples and the categorisation of the foregoing sites it is apparent that there are differences. Calculation of the Coefficient of Similarity (Brainerd 1951), where a coefficients of 200.0 and 0.0 reflect identical and totally different comparative units, respectively, provided a low reading of 135.9.



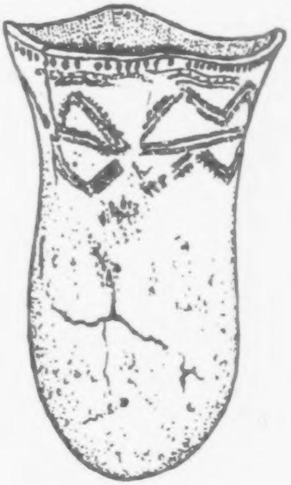


FIGURE 131: GLEN MEYER AND WESTERN BASIN POTTERY FORMS The vessel to the left is a 11th century Glen Meyer specimen from the Woodsmen site while that to the right is a 16th century Western Basin specimen from the E. C. Row site in Windsor, Ontario. (Drawings by Mr. David W. Laverie. Scale: the Glen Meyer vessel and the Western Basin vessel are 22.5 cm and 31 cm in height, respectively)

Subsistence:

Of paramount importance regarding changes in subsistence is the earliest archaeological evidence of corn horticulture in the Grand River Valley at AD 500 (Crawford et al. 1997). The corn was recovered under conditions of excellent archaeological context, unlike a 200 BC date on corn from the Dawson Creek site on Rice Lake (Jackson 1983:38-39). This is not to imply that the Rice Lake corn date is wrong, only that the circumstances under which it was found were amenable to contamination from later occupations of the site. There is indirect evidence that corn rapidly became an important element in the diet. Stable carbon isotope analyses of human bone from the 8th century Princess Point Surma burial site in Fort Erie detected a high consumption of C4 plants, one of the major categories of plant photosynthetic pathways which is the pathway followed by corn (Katzenberg et al. 1995). Similar evidence of high corn consumption was recorded in the bone of an individual from the 11th century MacAllan site on the Grand River (Woodley 1993:21). The likelihood that other cultigens were being grown in Ontario prior to the introduction of corn is suggested by a single sunflower seed (*Helianthus annuus*) recovered from a pit dated to 600 BC at the aforementioned Dawson Creek site. Also pertinent to southwestern Ontario are the 500 BC dates on squash (*Cucurbita pepo*) from sites in adjacent Ohio and Michigan (Wright 1999:639-641). It is becoming apparent that there was a long period of experimentation with other cultigens prior to the appearance of corn. Corn, on the other hand, while a far more labour intensive crop than either squash or sunflower, has the advantage of providing a substantial quantity of nutritious winter storage food. Also, unlike the earlier cultigens, it would have required an increasingly sedentary way of life involving considerable cooperative labour on the part of both men (field preparation) and, in particular, women (planting, tending, and harvesting). Corn most likely spread to the Grand River Valley by diffusion from out of the southwest (Smith and Crawford 1997). Although some would suggest that the rudiments of village life were established during Princess Point times (Crawford et al. 1998) the earliest definite evidence of established horticulture villages does not appear until the 10th and 9th centuries at Glen Meyer sites like Porteous (Noble and Kenyon 1972) and Pickering sites like 9th century Miller site (Kenyon 1968). The latter site would suggest that there is a longer history of established permanent horticultural villages since the ancestors of the inhabitants of the Miller site would have had to receive corn at an even earlier date and from the west. Natural plant foods retain their importance along with corn. At the Princess Point Grand Banks site on the Grand River, in addition to corn, acorn (*Quercus sp.*), butternut (*Juglans cinerea*), hickory nuts (*Carya sp.*), American nightshade (*Solanum nigrum*), brambles (*Rubus sp.*), ground cherry (*Physalis sp.*), strawberry (*Fragaria sp.*), chenopod (*Chenopodium sp.*), portulaca (*Portulaca oleracea*), and switchgrass (*Panicum sp.*) are recorded (Smith and Crawford 1997:17).

At many Princess Point fishing camps plant domesticates are totally absent. On Point Pelee seasonal camps fish and small marsh animals were most common although some large mammals were present as was evidence of the harvesting of black walnut (*Juglans nigra*) and butternut (*Juglans cinerea*) (Keenlyside 1976:202). Regarding the Princess Point seasonal occupations of the Varden stratified fishing site on Long Point, Lake Erie, ling, also known as burbot (*Lota lota*), was the major species present, pointing to a winter fishery through the ice as this is the only time of year when ling concentrate in shallow waters in large numbers during spawning (Scott and Crossman 1973:641-645). In addition to a nutritious flesh, ling liver is very high in vitamins A and D. Parasites harmful to humans are also associated with the specie such as *Triaenophorus nodulosus*. Other species of fish carry similar parasites harmful to people like the tape worm *Diphyllolothrium latum* in northern pike (*Esox lucius*). A wide range of other fish species were found at the Varden site including drum (*Aplodinotus grunniens*), northern pike (*Esox lucius*), and perch (*Perca flavescens*), which are all indicative of early spring through summer occupations, a probability further suggested by the presence of a range of fleshy fruits (Fox 1990). Deer bones were common along with a wide range of other mammals as well as clams and turtle.

Later in time at the Glen Meyer Van Besien village site, corn was the only cultigen recovered. Animal remains were dominated by mammals followed by molluscs, fish, and birds (Noble 1975a). Among the mammals deer was most important followed by dog, beaver, and woodchuck. Fish remains consisted mainly of suckers but a minor presence of whitefish, lake trout, and ling or burbot were indicative of both a fall and a winter fishery. At the later Calvert site, however, (Timmins 1997) all of the cultigens, corn, squash, beans, sunflower, and tobacco, were recorded, likely because the flotation field recovery method was applied at this site unlike at Van Besien. In addition fleshy fruits were recovered, mainly black nightshade, brambles, and strawberry as well as pot greens including purslane, cat-tail and sumac. There was only limited evidence of nut gathering, a finding in accord with the very minor evidence of nut bearing trees like butternut or walnut being used as firewood (Ibid:Table 6.11). As is usually the case, the dominant firewoods were beech and maple with a good representation of elm. In the faunal collections deer dominated followed by raccoon, bear, beaver, and suckers. Timmins, however, like others, makes the error of equating faunal-floral recoveries with total diet and ignores the contribution of the archaeologically invisible foods (Ibid:102) such as dried, deboned mammal and fish flesh, shelled dried mussel flesh, tubers, like Indian potato (*Helianthus tuberosus*), and mushrooms as well as most of the pot greens consumed mainly in the spring and early summer.

In contrast to the year-round occupied Glen Meyer complex village sites the Western Basin sites to the west appear to represent seasonal accumulations of debris and are characterized by numerous hopelessly intermixed occupations. The majority of the sites from which there is good information on subsistence date between the 11th and 13th centuries and, thus, were contemporary with their Glen Meyer neighbours to the east. The 11th century Dymock site on the Thames River produced quantities of corn as well as squash. Blackberry, strawberry, hawthorn, sumac, and butternut were among the wild plant foods (Murphy and Ferris 1990:242). Judged to be a spring to fall occupation, fish were particularly abundant with an emphasis upon suckers (*Catostomus sp.*) and pickerel (*Stizostedion vitreum*) (Fox 1986), both being indicative of a spring fishery during the spawning concentrations. The contemporary Bruner-Colasanti site, situated inland from the north shore of Lake Erie near Windsor, is exceptional in that it has been interpreted as representing a single winter occupation (Lennox 1982). The site produced corn as well as the earliest evidence of beans in Southern Ontario. A presence of corn and beans on a purported cold weather site may reflect a practice common among some late Algonquian groups in Northern Ontario. These include the Mississauga along the north shore of Georgian Bay where "The crop was planted in the spring, abandoned during the summer and the remnant left by the racoons, birds, and insects was harvested in the fall" (Wright 1972b:95). As with the Calvert site, at the Bruner-Colasanti site the pit matrices were put through a flotation process thus assuring the recovery of microscopic plant remains. Nut fragments, such as hickory (*Carya sp.*), acorn (*Quercus sp.*), and black walnut (*Juglans nigra*) were common but there was a scarcity of fruit seeds reinforcing the suggested winter occupation. Faunal remains in order of abundance were deer, grey squirrel, black bear, raccoon and an unusual abundance of marten. Birds were poorly represented as well as fish and amphibians. Characteristically, the bones were broken into small fragments, presumably to fit into cooking pots. In contrast, at the Kreiger site in the same general area (Kidd 1954) but in a warm weather locale, there was an abundance of fish, deer, other mammals, and turtle. Fresh water mussels were also common. Corn was present as well as a single grape seed. The 12th century Cherry Lane site had a particular abundance of chestnut, walnut, and butternut as well as corn (Murphy and Ferris 1990:236).

Western Basin people, particularly during the early period of their development, appear to have been basically hunters and gatherers occupying richly endowed resource areas while also planting some supplementary corn garden plots. Unfortunately, there is little subsistence information available from 16th century sites. It is mentioned that fish plus mammals were common at the Weiser site and that there was an abundance of stone net sinkers (Stothers et al. 1984), the latter suggestive of the use of gill nets. At the Parker Earthwork site nearly 1,100 so-called corn hills were plotted although relatively little charred corn was recovered (Lee 1958:10-11). The hills were 76 cm in diameter, spaced 1.5 m apart, and most were only 2.5 to 7.6 cm in height (Ibid:9). The heavy clay soils of the site would hardly have been suitable for corn crops and the hills may have pertained to some other phenomena. Deer, raccoon, and squirrel are identified as well as bird and turtle. Fish were particularly important but were largely unidentified except for drum or sheepshead (*Aplodinotus grunniens*). There are a number of vexing problems regarding the functions of these two sites which will be addressed in the subsequent section.

Settlement patterns:

Given that the Princess Point complex is believed to have been ancestral to both the Glen Meyer and Western Basin complexes, which shared many elements of technology and possibly mortuary practices but differed significantly with reference to settlement patterns, the three complexes will be treated separately. Princess Point spans the period from AD 500 to approximately AD 1000. Glen Meyer, developing out of the Princess Point complex, can be dated from AD 1000 to just prior to the end of the 13th century. Western Basin can only be traced from AD 1000 to the late 16th century in Ontario.

Princess Point Complex

Princess Point settlement was keyed to river, lake, and wetland environments (Crawford and Smith 1996) with occupations favouring river bars, sandy ridges, and the first river terrace. Upland sites on tributaries may relate to the transition to Glen Meyer when horticulture was beginning to have an impact on settlement strategies. In general, settlement systems were largely unchanged from earlier times with their focus on seasonally abundant natural food resources and, in particular, fish. For examples, sites along the north shore of Lake Erie from Point Pelee to Long Point usually represent warm weather occupations except for the high frequency of ling or burbot remains from the Varden site (Fox 1990) which is evidence of an important winter fishery through the ice. Evidence of horticulture is often lacking from these sites which also contain few features and though post moulds are present they are insufficient to demarcate houses (Fox 1990:179). On the tenuous basis of "...soil colour and texture differences...", as well as cultural debris and feature distributions, a 12 by 6 m structure has been inferred (Keenlyside 1976:197). Another tenuous dwelling has been uncovered in the Cootes Paradise wetland in Hamilton were warm weather camps are situated at the bottom of ravines along the water's edge. The poorly demarcated 4 by 3.5 structure with two interior pits and one exterior pit is not too convincing and may even relate to a later Ontario Iroquois occupation of the site (Smith 1997a). Of considerable interest from Cootes Paradise is the palynological evidence that a wild rice marsh was replaced by cat-tails around the time of the transition into Glen Meyer. In addition to harvesting wild rice in its own right, its presence would have undoubtedly attracted waterfowl.

The clustering of sites along major bodies of water and the presence of hearths, ovens, small pits, and post moulds has led to the speculation that such sites may have represented year-round occupations which, through time, shifted to the uplands (Smith and Crawford 1997). There are problems with such a proposition in that at sites like Grand Banks a 500 year occupation span is evident and, further, living on an exposed river terrace in the winter time would not represent a reasonable settlement strategy even if the terrace was not subjected to annual flooding between AD 500-900. There is little question, however, that river flood plains were important to crop production with over one quarter of the known eighty Princess Point sites from the area being situated next to the lower Grand River flood plain (Ibid:124). While it can be assumed that the demands of initial corn horticulture would have required some degree of sedentary settlement the process involved in the transition from a pattern of seasonal rounds based upon natural resource availability to one requiring an increasing degree of permanent or semipermanent settlement was likely a gradual one. This transitional process may well have involved crop abandonment after planting followed by a return to the fields at harvest time, a procedure which has not left a clear imprint on the settlement pattern evidence. Indeed, in commenting on the 17th century Algonquian Mississauga of Georgian Bay practice of planting a corn crop then scattering to other locales only to return to the fields at harvest time it has been observed that "The emphasis on planting corn is interesting since some scholars intimate that this process of domestication provides an example of how early Iroquoian groups might have initiated horticulture" (Bertulli 1981:9).

The important coastal fishing camp site of Varden on Long Point contained a series of stratified deposits extending from Princess Point into Glen Meyer (MacDonald 1986) which provided evidence of a continuity of seasonal settlement pattern strategy relative to the fishery. Although interpreted as a warm weather fish camp (Ibid:9) the dominance of ling or burbot (*Lota lota*), a fresh water cod representing 90% of the 300,000 faunal elements, clearly points to a winter fishery being of paramount importance. Ling spawn under the ice in shallow water, mainly from January to March, and it would have been the only time of the year that ling would have been readily available for netting or trapping as during warmer weather they are a widely dispersed, deep water predator. The large ling liver is extremely high in vitamins A and D and would have represented an important winter vitamin supplement.

While Princess Point dwellings have not yet been convincingly demarcated it is probable that the small, circular to ovate dwellings found on early Glen Meyer sites represent the survival of earlier styles of nuclear family dwellings. The evolution of the Glen Meyer multi-family longhouse, in conjunction with the evolution of matrilineal descent and matrilocal residence patterns, would have been intimately associated with the requirement of increasing cooperation of women as work groups due to an increasing reliance upon corn. Increasing sedentary settlement would have been an essential corollary of this process. Work group bonding of related women, sanguine and fictive, would have been enhanced by changes both in descent and residence in matrilineal communal longhouses.

Glen Meyer Complex

Glen Meyer settlement distributions consist of interior villages on sandy soils and seasonally occupied fish camp sites along the north shore of Lake Erie (Fox 1976). Along with the inland villages are associated hamlets, special purpose seasonal camps, and quarry sites (Williamson 1990:Table 9.1, Fig.9.10). The speculation that one site, the Little site, represents a deer pound structure (Williamson 1990:314, Fig.9-10), however, is questionable. It consists of a semi-circular wall 15+ m across but approximately one-third of this width lacked features and could have represented the lateral partition of an unusual dwelling. The remaining 10 m of the feature contained a number of pit features and thus the entire feature could simply represent a circular structure with a porch. Circular dwellings are known to occur in Glen Meyer. Such an alternative interpretation is not intended to imply that the structure was not associated in some way with the deer hunt as suggested by more than 10,000 deer bones from a single pit.

Hamlets are classified as being less than 0.5 ha in size with villages ranging between 0.5 and 1.5 ha with an average of 0.76 ha. Most villages, as well as hamlets, were surrounded by two or more rows of palisade and usually enclosed superimposed houses representative to sequential occupations. Of the 25 Glen Meyer sites located west of London, five are villages and twenty seasonally occupied hamlets (Williamson 1990:314). The aforementioned seasonal sites are situated mainly in oak stands within 5 to 10 km of a village while the villages are located on richer farming soils. Two to three villages generally cluster in any particular area and may have operated to some degree as cooperative units (Timmins 1997). All the Glen Meyer village clusters occur in areas of high natural resource richness. While many villages occupied soils which were not optimum for corn growing by today's standards the fields would have been once been composed of much richer virgin soils. There would also have been some necessary trade-off between the horticultural and the hunting and gathering benefits of any particular region. Farming of virgin soils, rich in humus despite texture and drainage limitations, may help explain the settlement pattern evidence of sequential occupations of the same village and, presumably, the planting of corn in the same fields. Also, as villages were generally small, it can be assumed that the horticultural demands on field fertility were not as high as in later times.

While multi-family longhouses represented the typical dwellings, circular structures from 5 to 6 m in diameter with central hearths, which probably housed one or two nuclear families, have also been recorded. The occurrence of both house types on the same site probably reflects the transition from essentially hunting and gathering nuclear family dwellings to multi-family horticultural based longhouses. Dwellings and other settlement features at special purpose hamlets can be quite variable. It is this variability of Glen Meyer settlement features such as house forms, interior features, arrangements of hearths and pits, and, in some instances, evidence of seasonal occupation, which have been interpreted as the product of a flexible settlement pattern associated with an evolving social and political structure driven by the increasing importance of horticulture (Williamson 1990:319).

Seasonality, as well as function, are believed to have been variable with reference to the various small hamlets scattered some distance from the major villages. The Kelly site, for example, produced evidence that deer hunting and nut collecting were the major activities, suggesting a summer-fall occupation. Indeed, the single 20 by 6 m longhouse erected inside of a stockade and the numerous pit features occurring both outside of the house and the stockade is reminiscent of Western Basin complex settlement patterns. The late summer to early winter Yaworski site, containing a single longhouse, two circular to rectanguloid structures 5 m in diameter or length and width dimensions, all surrounded by a single palisade and with many pits occurring outside of the dwellings, is interpreted as a deer processing site, presumably located in proximity to a deer pound. Nut fragments and raccoons were also common recoveries but the occurrence of pickerel or walleye (*Stizostedion vitreum*) suggests some use of the site in the spring when pickerel spawn and are more readily harvested. The storage pits at this site and other seasonal Glen Meyer hamlets resemble the large storage pits so characteristic of the Western Basin complex. The increasing frequency of such large exterior pits has been attributed to changes in storage practices due to Western Basin complex influences. The Berkmortel site, with its three parallel aligned longhouses containing the majority of the pit features and the combined importance of deer, nuts, and fish, is more suggestive of a small village year-round occupation rather than simply being a spring to fall occupation. Regardless of the seasonality and function of these small, special purpose sites, found in a range of ecological niches surrounding major villages, the settlement system is dramatically different from earlier settlement preferences and reflects the evolving importance of horticulture and the requirements inherent to the transformation from a hunting and gathering economy to a horticultural based economy.

The Porteous village on the banks of the Grand River, transitional from Princess Point into Glen Meyer, did not initially appear to have been palisaded (Noble and Kenyon 1972:Fig.3). Expanded excavation of the site, however, indicated that it was only 0.15 ha in size rather than 0.6 ha and was surrounded by a double stockade (Stothers 1976:161). Only partially excavated, there was evidence of superposition of houses. The complete longhouse measured 11.4 by 6.1 m, contained two central hearths and a number of small pits and, interestingly, a line of large posts approximately 1.5 m in from both house walls which would have represented supports for the interior edge of the bunklines running along both sides of the dwelling; a common feature of later longhouses. Stothers excavations revealed a 5.5 m diameter dwelling, as well as a rectanguloid structure which appears to have had an asymmetrical attached porch. The later Van Besien site, located on a steeply banked defensible peninsula adjacent to a creek, went through three building expansions; namely from 0.5 to 0.6 to 1.2 ha (Noble 1975a). Given the nature of the topography hill side middens were the rule. A large outside activity area was demarcated by a line of posts which connected the end of a house to a stockade line; a common later interior village defensive device. House forms were highly variable and even hearth locations occurred both along the side of a house as well as down a central corridor. On the same drainage as the Van Besien site is the 0.3 ha Dewaele site which was similarly situated on a defensible peninsula (Fox 1976). Surrounded by a triple stockade, the village contained both ovate dwellings and longhouses, some superimposed over one another. The only clearly demarked dwelling was almost square at 8 by 7 m with three central hearths and large storage pits encircling the house walls (Ibid:Fig.9). A row of approximately centrally aligned large posts suggests a gabled structure and bears little in common with the typical longhouse. Indeed, this particular structure was been speculated to have functioned as a storage facility for the village (Fox 1976:185). Interior defensive works consisted of lines of posts connecting houses to the multiple palisade lines indicating defence was a major concern. Limited evidence of the maintenance of earlier trade networks is seen in the single marginella marine shell bead and two native copper beads.

Two completely and nearly completely excavated Glen Meyer villages, Elliot and Calvert, shared a number of common settlement pattern features. Both were characterized by sequential house building stages surrounded by stockades and a range of house forms. Located in the same cluster of Glen Meyer sites as Van Besien and Dewaele, the 11th to 13th century Elliott site consisted of three partially superimposed villages with two of them being surrounded by a double palisade (Fox 1986a & b). Longhouses ranged from small rectanguloid to squarish structures 5 to 7 m long and 5 to 6 m wide up to a 15 by 6 m longhouse (Fox 1986b:Fig.1). There was also a circular dwelling 6 m in diameter which was very similar to one at the earlier Porteous site. Mended vessel fragments indicated that a majority of the dwellings were probably contemporary except for the eastern portion of the site. This dominance of short longhouses appears to be typical of Glen Meyer sites unlike the situation with Pickering longhouses. Situated on the Thames River drainage, the Calvert site was located on a major transportation route to another major cluster of Glen Meyer sites 25 km down river (Timmins 1997:Fig.8.3). Like many Glen Meyer village it was in close proximity to a major marsh with all of its rich floral and faunal resources. At least four building stages are proposed for this particular village on the basis of a number of factors, such as superposition of house structures, general spatial configuration, post mould densities, and radiocarbon dates; the latter factor being regarded as the most reliable indicator of construction sequence. This is a questionable assumption. The construction sequence began with a single dwelling followed by an Early Phase represented by three longhouses and a so-called specialized structure, all surrounded by a single palisade. Longhouses ranged in length and width from 14 to 22 m and 5.5 and 6 m, respectively. Two of the longhouses contained relatively few pit features but the other, adjacent to the small 4.5 by 3.5 m special structure, contained abundant features (Timmins 1997:Fig.5.9). During the Middle Phase three closely spaced longhouses and a rectanguloid structure were surrounded by a double palisade with the latter structure being connected to the interior palisade. Longhouses were from 21 to 23.5 m long and 6.5 m wide while the rectanguloid structure measured 8 by 6 m. Relatively few interior features are apparent (Ibid:Fig.5.10). During the Late Phase, three small, east-west oriented longhouses were surrounded by a single palisade. Houses ranged from 10 to 12 m in length and 6 m in width (Ibid: Fig.5.11). The proposition that the site was occupied from the early 12th to the mid 13th centuries is, however, tenuous given that the chronological sequence is based on the imprecise chronological indicators of the passage of time such as radiocarbon dating and house wall post concentrations. Most house pits served a final function as garbage disposal receptacle. Small pits tended to cluster in the centre of the houses while the larger pits occurred along the sides of the house walls. There is evidence of interior village defensive planning with channelling lines of posts creating entrapment areas if an attacking force should manage to breach the outer defences (Ibid:Fig.7.35). Three types of structures are identified: residential longhouses; residential-storage structures; and non-residential workshop and storage structures (Timmins 1997:198). On the basis of a six member family with two families sharing a single hearth a very tenuous population estimate for the three phases from early to late are 108, 144, and 72 people, respectively. There was little evidence of participation in trading networks at the Calvert site. Most chert varieties recorded were locally available except for some Kettle Point chert from Lake Huron 75 km to the west.

The Western Basin Complex

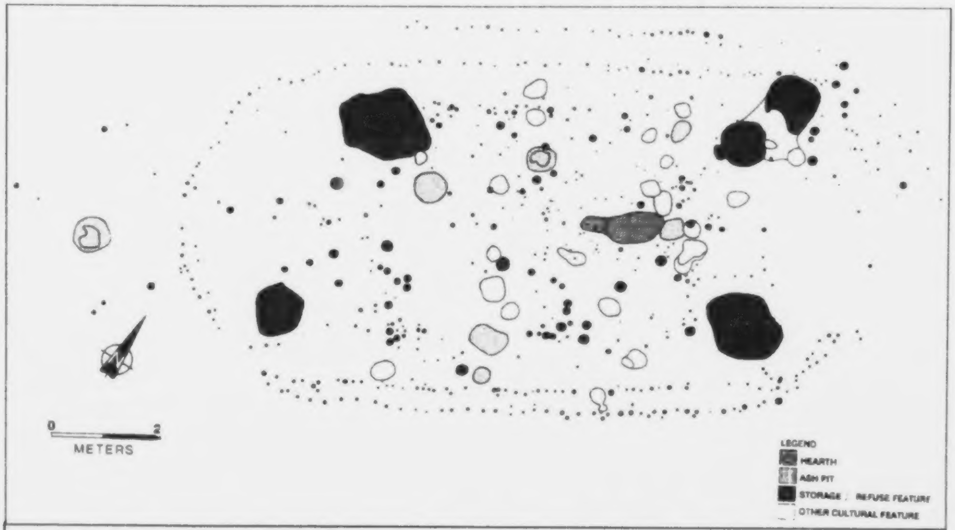
The Western Basin complex to the west of the Glen Meyer complex in the Lake St.Clair region and adjacent areas, has been segmented into a number of chronological phases extending from approximately AD 500 to the early 17th century (Murphy and Ferris 1990). Typically, early sites consist of multi-component, warm weather occupations, often lacking evidence of house structures but characterized by many large storage pits (Ibid:Fig.7.26) which exhibit little secondary use as garbage receptacles. There is also some evidence of winter occupations as suggested by the presence of ling or burbot remains; a fish species which can only be readily captured during their spawning cycle under the ice in shallow water. At the early 11th to mid 13th century Cherry Lane site north of the Lake Erie shore a rectanguloid structure measuring 13 by 7 m was exposed and the end of another similar house was encountered. The major features at the site, however, were large external storage pits (Murphy and Ferris 1990:Fig.7.28). The completely exposed structure contained three hearths and a number of pits and likely housed one or two extended families. In most respects the structure is similar to contemporary small Glen Meyer dwellings. Like most of the lakeshore sites, the interior sites are characterized by scattered storage pits but little evidence of clearly demarcated house structures. Pertinent to deer processing the Van Bemmel site near the Thames River produced an abundance of arrowheads, scrapers and utilized flakes as well as quantities of calcined bone, the latter possibly indicative of grease rendering. Associated small pits have been speculated to have functioned as smudge pits during hide processing (Murphy and Ferris 1990:242-243). During the stage of development leading up to the beginning of the 14th century Western Basin communities appear to have lacked formal year-round villages with settlement following a seasonal sequence of summer occupations along lake shores and major drainage systems followed by cold weather dispersal of families into the interior for nut gathering and deer hunting (Bechtel and Stothers 1993; Murphy and Ferris 1990) although there is some evidence of large winter camps (Lennox 1982) perhaps associated with deer yard areas.

Favoured locales for warm weather seasonal camps were sand ridges overlooking lake shores or river flats. Such is the case with the La Salle-Lucier site (Lennox and Dodd 1991). At this site a palisade was constructed during the early 13th century occupation despite the fact that there are no clearly demarcated house floors but numerous pits. As with most such sites it is situated in a good fishing locale. At the nearby Liahn site an erratic floor plan has been attributed to a 24 by 7 m longhouse with rounded ends (Kenyon 1988) while at the E.C. Row site in Windsor partially exposed floor plans are believed to represent houses 8 to 8.5 m wide and from 7 to 30 m long (Lennox and Dodd 1991:48-49) although the erratic post patterns leaves this reconstruction in question (Lennox and Molto 1995:Fig.3). That is not to say that there are not definite lines of posts but only that they do not clearly define structures nor do they appear to have been associated with a tightly clustered cemetery of five graves. Another typical warm weather site is the Kreiger site on the Thames River east of Lake St.Clair (Kidd 1954). The site is situated on a sandy bluff overlooking a clay plain and the River. Numerous large storage pits, many intersecting one another and thus indicating multiple seasonal occupations of the site, as well as a burial area on the edge of the site, were recorded. Pit diameters ranged from 1.2 to 1.5 m and 50 to 75 cm in depth. No house sites or hearths were identified although the latter would have probably been destroyed by recent deep ploughing. The abundance of fish remains revealed the major purpose of the occupation. Another probable warm weather occupation is the 11th century Dymock site overlooking the Thames River and occupying two different terraces (Fox 1986:Fig.1). A palisade was present but, once again, no recognizable house structures. In addition to a hillside midden were a number of pits both inside and outside of the palisade as well as evidence of four exhumed primary burials and a dog puppy burial. Fish remains indicated a spring occupation while the mammal remains pointed to fall hunting and cultigens, such as squash and corn along with fleshy fruits, reflect summer activities.

A winter occupation is attributed to the Bruner-Colasanti site near Windsor (Lennox 1982). Eight separate clusters of pits, generally associated with a hearth, surrounded a central plaza and are interpreted as house floors despite the absence of direct structural evidence. Some pits contained complete pottery vessels which apparently functioned as storage containers. It is inferred that the pits mainly served to store vegetable matter. Corn from the site may have been planted in adjacent fields in the early summer after which people would move to fishing and hunting camps along the lakeshore to return in the fall to harvest what remained of the crop. The site is believed to have been a single occupation to judge by the lack of intersecting pits. Occupying 1 ha of well drained soil with an adjacent spring there were apparently no defensive considerations. The site area was adjacent to a black ash swamp as well as marsh areas which would have provided a wide range of resources. Another winter site and one of the rare instances of a single component is the Sherman site near the lower Thames River. The site consisted of a single cabin, measuring 7 by 5 m, which contained two central corridor hearths and associated pits, including a pit containing a storage pot. Large posts at either end of the central corridor suggest the existence of a gabled roof (Murphy and Ferris 1990).

It is still unclear what was happening to Western Basin complex sites in Ontario during the 16th century and it is doubtful if any such sites existed in the area as late as the early 17th century. Sites are known but, in most instances, are incompletely described. While pottery styles typical of the 16th century appear on multi-component sites they cannot be isolated into discrete components. There is also the unresolved debate concerning the in place development of Western Basin (Murphy and Ferris 1990) or its replacement around the beginning of the 14th century by an intrusive Mississippian culture called the Sandusky tradition (Stothers et al. 1994). The tentative 24 by 7 m longhouse from the Liahn I site, for example, may relate to this late stage of development. Certainly the abundance of daub (Murphy and Ferris 1990:Fig.7.31) at this multi-component

'A'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METERS
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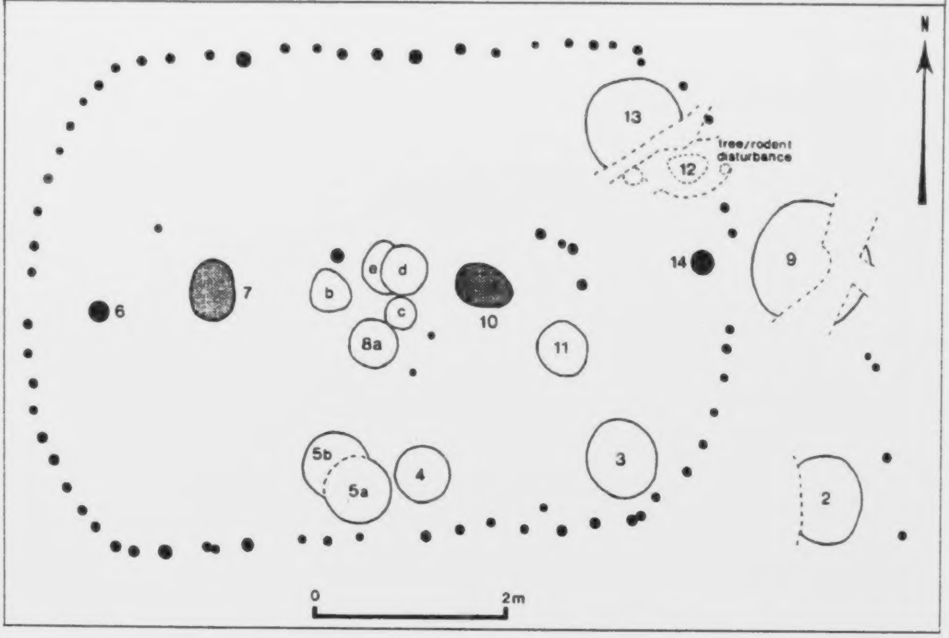
OTHER CULTURAL FEATURE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13
tree/rodent disturbance
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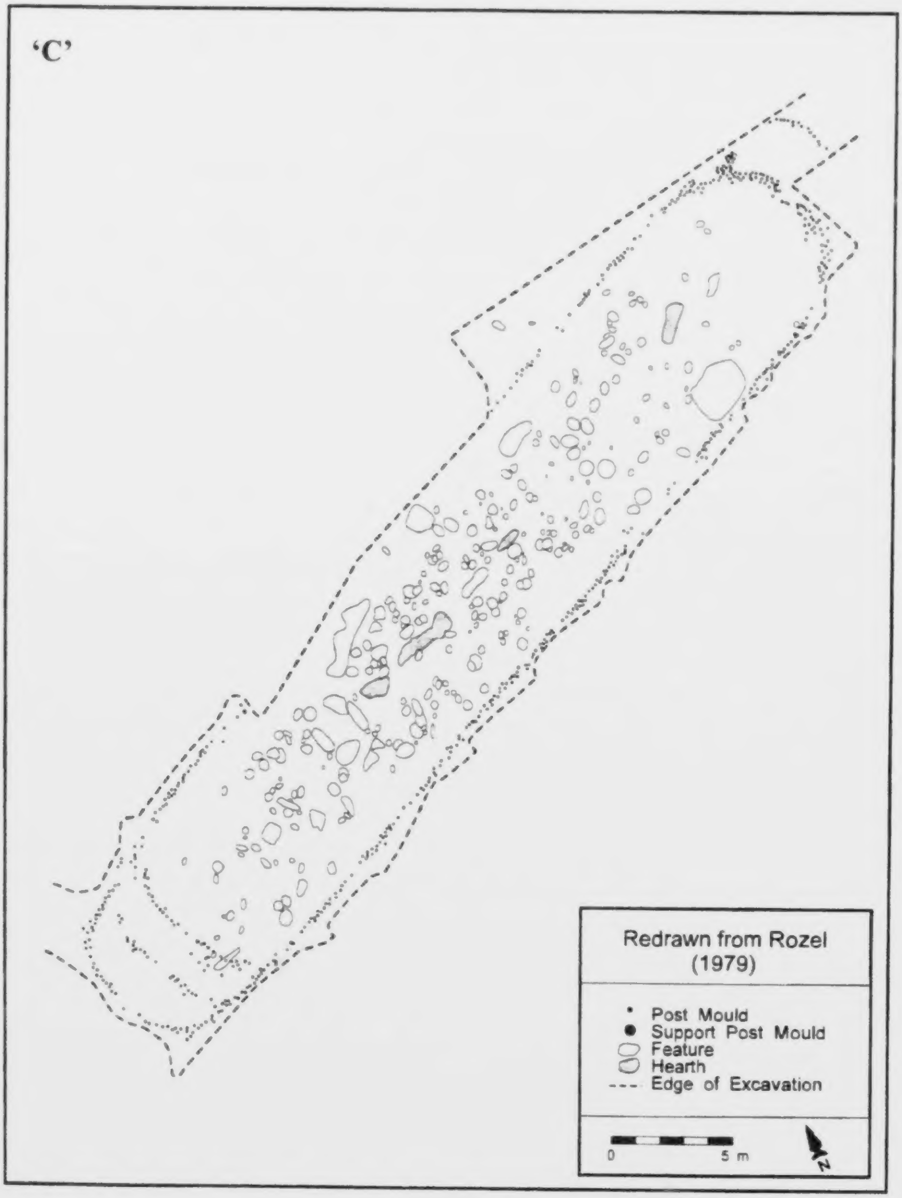
'C'
Redrawn from Rozel (1979)
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Edge of Excavation
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5 m
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FIGURE 132: EXAMPLES OF GLEN MEYER, WESTERN BASIN, AND PICKERING COMPLEX HOUSES The Glen Meyer longhouse (A) is from the 11th to13th century Elliot

site, the Western Basin complex longhouse (B) from the 13th century Sherman site, and, for comparative purposes, the Ontario Iroquois Pickering longhouse (C) is from the 13th century Gunby site in the Niagara Escarpment. House lengths can have a considerable range on both Glen Meyer and Pickering villages. Glen Meyer houses, however, are generally much shorter than their Pickering equivalents. Even allowing for internal variability of house structures the Glen Meyer and Western Basin houses share more in common with each other than with their eastern Pickering neighbours whose floor patterns clearly presage later Iroquois longhouses (Floorplans A and B are reproduced with permission from Murphy and Ferris 1990:7.35 and Williamson 1990:Fig.9.7 and floorplan C is from Finlayson 1998:Fig.III.3.26 reproduced with permission)

summer site suggests the presence of clay covered or chinked dwellings, a late house feature. House daub has been attributed to the Upper Mississippian cultural pattern (Stothers et al. 1984:74). This is, however, a leap in faith given the absence of evidence of actual dwellings despite the fact that house structures, associated with daub, have been recorded from the Indian Hills and Fort Meigs sites in adjacent Ohio. Earthworks surrounding sites are also a late feature and although their appearance has been attributed to a westward shift of the Ontario Iroquois (Ibid 255) their frequency on adjacent Michigan and Ohio sites would suggest another origin. Information is so sparse concerning these earthwork sites, often associated with burial mounds and comparatively little refuse, that it raises questions if they were villages, sacred domiciles, or served a combination of functions. Certainly direct evidence of horticulture is limited. What is clear is that the occupants of the few Ontario sites were interacting with contemporary 16th century Ontario Iroquois villages a short distance to the east (Murphy and Ferris 1990:256-259). While it has been suggested that large sites like the Parker Earthwork, Weiser, and Libby represent Western Basin frontier villages aggregating into larger villages as a defence in the face of increasing Ontario Iroquois aggression (Ibid:263) it still needs to be demonstrated that they were actually habitation sites in the sense of normal villages.

The Parker Earthwork is currently the best described of the Ontario earthwork sites (Lee 1958). It was first recorded at the turn of the 20th century (Boyle 1902). The earthwork itself measures 100 by 53 m and consists of a single earthwork surrounded on both sides by ditches with a single entranceway still being visible. Four small burial mounds are stated to have once existed outside of the earthworks. Lee suggested that this frontier village was abandoned and then used as a corn field as evidenced by low "corn hills". He further recognized the site's relationship to sites in adjacent Ohio and Michigan and that considerable Ontario Iroquois influence was evident. Unfortunately, his excavations were limited in extent (Figure 133).

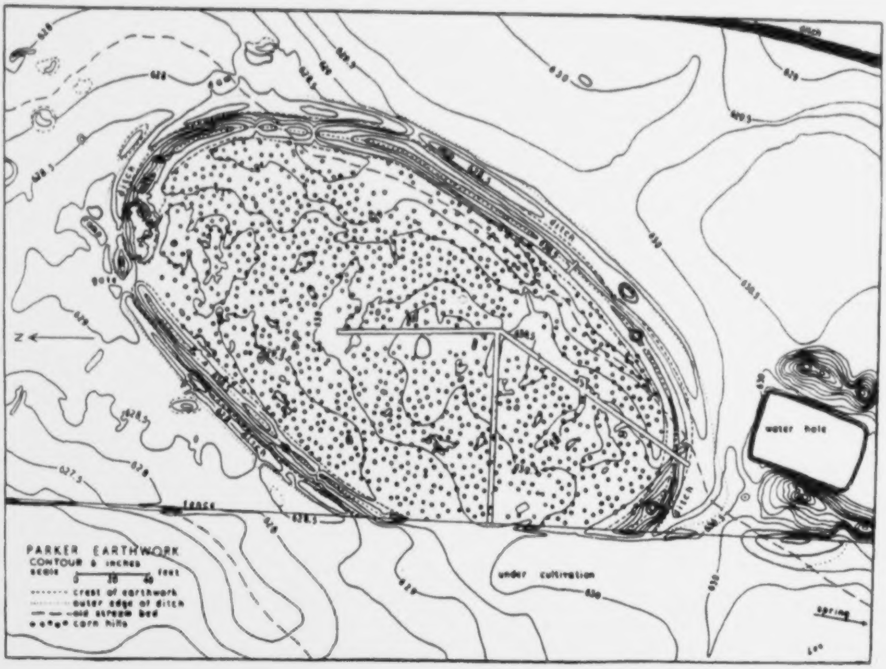

PARKER EARTHWORK
CONTOUR 6 INCHES
scale
0
20
40
feet
crest of earthwork
outer edge of ditch
old stream bed
corn hills
ditch
water hole
fence
under cultivation
spring
Z
630
629
628
627.5
628.5

FIGURE 133: THE PARKER EARTHWORK SITE PLAN. When this floor plan was made at the turn of the century the site was still intact. Examination more than half a century later by Thomas E. Lee found the map accurate in its essential details although the western edge of the earthwork had been destroyed (Reproduced from Lee 1958:Fig.1).

There are a number of puzzling aspects to this site. First, it is situated on an isolated flat located some 5 km south of the bottom of Lake Huron and 3 km east of the St.Clair River removed from any navigable waterway. The soil is a heavy clay, hardly suitable for corn growing as was recognized by Lee, which raises questions regarding the over 1,000 so-called corn hills plotted within the boundaries of the earthwork. While scattered single post moulds were recorded the only possible portion of a structure consisted of two parallel rows of post suggesting a 6.7 m wide structure albeit of flimsy construction. It is pertinent to note that Lee's long, narrow trenching excavation method is particularly suited to detect house structures. Posts suggestive of a stockade were not in evidence in the earthwork proper. Cultural debris, other than fire cracked rock, was scarce and the only evidence of possible burials was a child's cranium fragment. Middens were absent and only a few pits were encountered. Pipes occurred "...out of all proportion to the amount of related pottery" (Ibid:14). For example, 203 pottery rims were recovered and 53 pipe bowls with the latter all being Ontario Iroquois tradition types. It may be noted that an unusually high ratio of pipes to vessels on Ontario Iroquois sites, along with other lines of evidence, has been attributed to the process of alliance maintenance (Finlayson 1998:410). The pipes and a minor number of the rims of Ontario Iroquois styles would date the site to the 16th century. Faunal remains were dominated by fish. The paucity of cultural debris, the concealed location of the site on a soil type generally avoided by horticulturists, the absence of significant evidence of house structures and features within the earthwork, all raise questions of whether it was an actual village site or served some other function, possibly ceremonial. The Ontario Iroquois presence in the form of pipes, in particular, and their high ratio relative to pottery vessels only emphasizes that this was no normal village site situation.

The related but poorly described Weiser site shared a number of features with the Parker Earthwork. Approximately 2.0 ha are stated to be enclosed by an earthwork with a cemetery outside of the eastern end of the earthwork and "...an inner circular compound or enclosure encircling a single circular house pattern" (Kroon 1972:216). This internal enclosure is said to be demarcated by post moulds set into a refuse filled trench although evidence of a palisade has been questioned (Stothers et al. 1984:62). As with the Parker Earthwork, cultural debris was sparse but did include some daub as well as evidence of contact with Ontario Iroquois tradition people to the east, particularly in the form of pipes.

Cosmology:

As with the preceding sections, **Cosmology** will be considered first for the time period roughly from AD 500 to 1000 pertaining to the Princess Point classificatory unit to be followed by consideration of the post AD 1000 Glen Meyer and Western Basin complexes. While the Glen Meyer sequence is terminated around the end of the 13th century the Western Basin complex in Ontario survives into at least the late 16th century in the Lake St. Clair region.

The Princess Point Complex

The Surma site is a major Princess Point cemetery accidentally encountered in the City of Fort Erie at the embouchure of Lake Erie into the Niagara River (Emerson and Noble 1966). Fort Erie sits upon limestone outcrops rich in high quality Onondaga chert which attracted people from the late Archaic 4,000 years ago through to the early 17th century. Archaeological debris and features can be encountered anywhere in proximity to the River bank (Williamson and MacDonald 1998). The cemetery contained at least seventeen individuals placed in separate graves. Bodies were mainly buried in a flexed position although dismembered and incomplete bodies were also represented. Offerings to the deceased included whelk marine shell cylindrical beads, ground slate pendants, arrowheads, whetstones, a complete obtuse angled stone pipe, and other items. Two of the polished slate pendants were decorated with a central incised axis with connecting equilateral and obliquely radiating incisions leading to the speculation that the images may symbolize "...the original "world tree: growing at the "cosmic axis...", which links the earth and sky or humanity and the spirits" (Williamson and MacDonald 1998:131). Other possible shamanic meaning of the incised designs are considered. This assemblage of artifacts, particularly the broad equilateral triangular arrowheads, permit a dating of the cemetery between approximately AD 700 and 900. The nature of the offerings reflect the survival of the earlier trade network and its intimate relationship with the mortuary system

As has been noted in chapters 32 and 33, smoking is attributed to religious rather than secular behaviour. While pipes are never common on Princess Point sites they are generally present. Tobacco seeds have been recovered as early as the 10th century from Princess Point sites (Fox 1990:178). It is worth noting that the stone pipe from the Surma cemetery was associated with an adult male, a specific gender association encountered in later Ontario Iroquois cemeteries such as the Grimsby site (Kenyon 1982). This association with adult males reinforces the non-secular nature of smoking described in the early French documents. While the association of smoking with men is typical of Iroquoian societies if Princess Point is indeed ethnically Algonquian then it would represent one of the many shared cultural practices with neighbouring Iroquoian people. Of course, a single instance hardly makes a convincing case.

An exceptional AD 500 isolated grave near the Grand River, accidentally disturbed by modern bikers in a sand dune area, contained an eight year old child richly provided with offerings including a possible medicine bundle (Fox and Molto 1994). The flexed body had a large number of marine shell *marginella* and *olivella* beads in the head area as well as seven marine shell whelk columella beads, a white chert flake, and a cluster of unmodified animal bones. Human blood residues were detected on the chert flake. The bone cluster, placed under the neck and shoulder of the body, consisted of a deer fawn tail, an otter tail, a duck foot and wing tips, and two halves of beaver right lower incisors. The authors speculate that the offerings were imbued with regeneration symbols such as the duck and beaver symbolizing the mythological Earth Diver involved in the Creation of the World.

Another exceptional burial on the Lake Erie shore was exposed by a large tree fall caused by the undercutting of wave action at Long Point (Fox and Molto 1994a).

Estimated to date to the 10th century, around the time of the transition from the Princess Point complex into the Glen Meyer complex, and despite wave disturbance the grave appears to have once held a primary burial. The adult male in his thirties was associated with two juvenile bear mandibles, an adult bear mandible, four drilled bear phalanges, a river otter maxillae, a bone tube, an antler tine, and a section of a beaver incisor. The distal ends of all of the bear mandibles had been removed and the bone tube was directly associated with the otter maxillae. Also present were an unmodified red and white feldspar pebble, a quartz pebble, and a shale pebble, the latter exhibiting evidence of grinding and flaking. The authors provide a compelling reconstruction of the grave as being that of a shaman. It is interesting to see Hopewell Mortuary Cult paraphernalia, like worked bear jaws, surviving this late in time although clear evidence of such hold overs from an earlier time period are apparent in the AD 700 earthwork and burial mounds in Michigan at sites like the Carsten Mound (Fitting and Zurel 1976).

The Glen Meyer Complex

Glen Meyer mortuary practices are not only poorly known but variable and often the evidence is equivocal (Spence 1994; Wright 1994a). Part of the problem is that Ontario Iroquois populations settled in the same regions as their Glen Meyer predecessors; likely for the same reasons relating to soil-drainage characteristics and natural resource richness. For example, it is still uncertain whether true ossuary burial involving large numbers of secondary burials being deposited in a single grave pit is a Glen Meyer mortuary trait. The Rogers Ossuary in Brantford (Mullen and Hoppa 1992) is a case in point. Radiocarbon dates on bone calibrate a statistical spread of AD 785 to 1035 suggesting a possible association with a nearby Glen Meyer village, hamlet, and camp (Williamson 1990:Fig.9.2 & Table 9.1). While the Rogers Ossuary site is likely a Glen Meyer feature the issue of whether it is an ossuary in the strict sense of the word is still in question. Regrettably, there are no detailed notes regarding the 1935 salvage excavation of the site and therefore it is uncertain whether the 28+ individuals buried were secondary or primary burials or a combination of both burial forms. Further, the high incidence of dental attrition in conjunction with low frequencies of cavities characteristic of the population stands in marked contrast to the evidence of dental disease associated with the high carbohydrate corn diet of the population of a contemporary Pickering ossuary (Ossenberg 1969).In terms of dental disease the Rogers Ossuary population is more similar to earlier hunters and gatherers than horticulturists. On the other hand, the absence of ribs, hand and foot bones but the presence of fetal bones (Mullen and Hoppa 1992:38) would suggest secondary burial and, in this respect, resemble the Ontario Iroquois pattern. Photographs taken at the time of the excavation do indicate that some articulation of bodies or body parts existed. Charcoal was also intermixed with the bones which, to the best of my knowledge, represents a unique trait for ossuaries. What is particularly worrisome with a Glen Meyer designation for this feature is that despite the exposure of numerous Iroquoian ossuaries throughout Southern Ontario by ploughing and other recent activities the Rogers Ossuary is still the sole potential Glen Meyer candidate even given the 800 years of Princess Point-Glen Meyer occupation in the area. In contrast, in only two townships of Simcoe County in Huronia thirteen ossuaries had already been discovered by the turn of the century (Hunter 1907). Further, in Huronia the Iroquoian occupation and horticultural practices spanned less than half as much time as that pertaining to the Rogers Ossuary location. The foregoing provide grounds for suspicion that the Rogers Ossuary burial pit, despite the radiocarbon dates, may pertain to a prehorticultural community as suggested by the dental pathology and the equivocal information regarding secondary versus primary burial or some combination of the two, and the apparently unusual trait of charcoal being incorporated in the grave fill. Dates on the charcoal, if any was saved by the original excavators, in conjunction with stable carbon analysis to determine the extent of corn consumption could help throw light on the matter. As it stands now, the Rogers Ossuary is an enigma in terms of its cultural affiliation, its status as a typical ossuary, and begs the question that if it is indeed a Glen Meyer feature why it is unique across the heavily disturbed recent landscape of southwestern Southern Ontario.

Another equivocal feature is a so called small ossuary of 25+ individuals discovered immediately east of the mid 14th century Middleport site down river on the Grand River from the Rogers Ossuary. The ossuary possibly pertains to the earlier Princess Point occupation of the same site rather than the major Ontario Iroquois occupation. This possibility, surmised by the excavator of the Middleport site (Wintemberg 1948:39), was based upon the presence of a large biface knife, marine shell disc beads, a bone bead, a chert flake and a broken chert arrowhead in the ossuary, an atypical collection of grave offerings for precontact Ontario Iroquois ossuaries which are usually devoid of offerings. Other unusual associations with this ossuary were a *child/adolescent* cremation, a common Western Basin mortuary trait, and the presence of charcoal in the grave fill. Although it would be exceptional, it is not impossible that the artifacts associated with this 2.4 by 2.7 m communal grave at the Middleport site pertain to the later Iroquoian occupation. Indeed, the dental pathology, unlike the situation with the Rogers Ossuary, was typically Iroquoian in having a high instance of caries (Patterson 1984:31). On the other hand, late Princess Point people with their increasing consumption of corn could exhibit increased evidence of the dental disease associated with the diet of corn. Like the Rogers Ossuary site, the Middleport burial pit characteristics were not documented in any detail by the 1912 excavators, Sir Francis Knowles and F. W. Waugh (Ibid:38).

Unlike cultural affiliation problems associated with the preceding ossuaries a small Glen Meyer ossuary was excavated at the Praying Manis site in London where a grave pit, possibly within a house, contained the remains of eight secondary burials of adult and subadult individuals. The remains were "...represented for the most part by long bones, crania and mandibles" (Spence 1994:9). The incomplete nature of the bodies, the fact that one mandible had a number of drilled holes in it, and that both a skull and a long bone bore cut marks clearly indicate that this feature deviates from usual Ontario Iroquois ossuary contents. Indeed, the nature of the remains most closely aline themselves with Western Basin mortuary practices. As it currently stands the question of whether Glen Meyer or Princess Point people practised true ossuary burial similar to what has been abundantly demonstrated for the Ontario Iroquois is still an issue worthy of further research.

Other forms of Glen Meyer mortuary practices can be both variable and site specific. Major excavations, such as at the Porteous (Noble and Kenyon 1972; Stothers 1976), Van Besien (Noble 1975a), and the Calvert sites (Timmins 1997), produced no evidence of human burials unlike the situation with their contemporary Pickering neighbours east of the Niagara Escarpment. Secondary burials, primary, and exhumed primary burials have, however, been reported from other villages (Lee 1952; Spence 1994; Williamson 1990:308) and warm weather fishing camps (Spence et al. 1978; Spence 1994)). A distinctive Glen Meyer mortuary practice was to bury individuals away from settlements. This trait reflects a continuity with previous Princess Point practises. Isolated burials include four secondary burials in a rock shelter (Spence and Fox 1992), a cemetery on a river bank composed of multiple and single secondary burials (Spence 1994; Williamson 1990), and, of particular interest, a possible mortuary cabin site associated with secondary burials at the MacAllen site (Woodley 1993) on the bank of the Grand River. The MacAllen site structure consisted of a 15+ by 7 m longhouse with two centrally aligned hearths and a virtual absence of house interior posts or pits. One of the two small pits external to the longhouse contained only charcoal and the other held a cache of Onondaga chert cobbles and spalls. Associated burials were largely destroyed by earlier highway construction but appear to have originally occurred outside of the house. Investigation of possible additional burial features was stopped at the request of the local native community. The burial pattern at the MacAllen site has been appropriately compared to that of the Western Basin complex (Woodley 1993:42). In a similar setting as the MacAllen site the Zamboni cemetery was situated 10 m back from the bank of the Grand River and consisted of thirteen burial pits containing scattered human bone capped by cultural debris.

As has been noted, the scarcity of burials in Glen Meyer village sites stands in marked contrast to their frequency on contemporary Pickering village sites. This difference between Glen Meyer and Pickering villages is particularly striking given the far more extensive archaeological excavation of the former. As with the Pickering and Western

Basin burial sites, however, grave offerings are generally lacking. It has been speculated that people who died at the interior Glen Meyer villages had their remains exhumed in the spring for final burial at the lake shore seasonal fishing camps (Noble 1975a:47; Spence and Fox 1992; Spence 1994). In this respect, there does appear to be a pattern emerging whereby Glen Meyer people sought out large bodies of water for the final resting place of their kinsmen, a pattern shared with the Western Basin complex but not the Ontario Iroquois.

Although human burials were absent at the Calvert site a number of discoveries are pertinent to **Cosmology**. For example, the nearly complete remains of a deer, a bear, a bobcat (*Lynx rufus*), and two raccoons placed together in a pit obviously represented a ceremonial act (Timmins 1997:94). A most unusual discovery at this site were the bony remains suggestive of a bird skin of a Carolina parakeet associated with a complete stone pipe, a slate knife, and an antler tool. The bird skin and the pipe were reasonably attributed to a calumet pipe where the skin would have been originally sewn onto the wooden pipe stem. It was further speculated that a shaman would use tobacco for its hallucinatory effect in order to achieve soul flight for visionary purposes; thus the bird remains (Von Gernet and Timmins 1987). Calumets, consisting of either a rod or a pipe stem with detachable bowl, both frequently ornamented with a bird skin, were one of the most important ceremonial objects to be encountered throughout much of eastern North America (Hall 1997:48-58). The Calvert calumet would have been an imported object, likely from the Ohio Valley or even further south. The large, finely finished cylindrical limestone pipe bowl, intended for attachment to a wooden stem, stands in marked contrast to the generally crude, small typical pottery Glen Meyer pipes. The now extinct Carolina Parakeet was the only member of the parrot family which once existed in what is now the United States with a range concentrated in the southeast. Thus, not only the bird but the pipe appear to be alien to the Glen Meyer complex. It is also worth noting that a unique pottery bird effigy pipe from the King's Forest Park site in Hamilton likely relates to the Glen Meyer occupation (Fox 1967:Fig.20). In addition to the foregoing, a number of Archaic projectile points were recovered from the Calvert site and could relate to either an earlier occupation of the site or to the Glen Meyer occupants acquiring them as charms. At the Van Besien village a dog burial was uncovered in a midden (Noble 1975a:11), a most unusual medium for a dog burial. Some scattered adult human remains were found in middens across the site, including a charred specimen, and were regarded as evidence of prisoner sacrifice (Ibid:42).

The Western Basin Complex

There is evidence at the MacAllen site on the Grand River (Woodley 1993:42) that the Glen Meyer complex may have erected mortuary longhouses like the Western

Basin complex, the most famous of these being uncovered at the Younge site west of Lake St.Clair in Michigan (Greenman 1937; Murphy and Ferris 1990:267). Structures at the Younge site consisted of two longhouses set 122 m apart with the longer of the two being associated with burials both inside and outside of the 190 m long structure (Greenman 1937:Map3). Of the 57 graves containing the remains or partial remains of more than 82 individuals nearly all occurred in an area 50 m long in the central area of the structure as well as under the 1.8 m wide mass of posts making up the house walls. The smaller southern longhouse, measuring 75 m length, differed from the larger structure in lacking any association with burials, having similar but fewer interior features, and appearing to consist of two or three different building stages (Ibid:Map 5). Interior features were mainly hearth floors, small "ash pits", and a scattering of post moulds, particularly in the eastern half of the structure where rebuilding or structure extensions had taken place. In the larger longhouse most of the archaeological specimens came from the topsoil and from refuse capping the burials; the latter trait noted at the Zamboni cemetery on the Grand River. Pit contents from the Younge site structures did not consist of the normal debris found in habitation longhouses. Most of the pits contained "grey-blue" ash with some carbonised bone and pot sherds but even these were sparse compared to what is encountered on normal habitation sites. The numerous hearth floors consisted of sand oxidized red by heat. Another Michigan mortuary site, Riviere au Vase, is estimated to have once contained the remains of more than 2,000 individuals (Fitting and Zurel 1976:227-228). Obviously such sites were used over long periods of time. Burials consisted for the most part of extended and incomplete primary burials although bundle burials, cremations, flexed burials, and isolated skulls, as well as other body parts occurring in either single or multiple internments, have been identified. Distinctive traits were the removal of disks from the skull and/or drilling a hole or holes in the skull and, less common, artificially modifying long bones and rearticulation of same to the torso. Many individuals were not provided with secondary modification of body parts suggesting some social factor at work which likely followed inherited rather than achieved status family lines as suggested by the presence of modified child remains. It has been speculated that the modifications of the skeletal remains were intended for assist in the display of certain bodies during the closing burial ceremonies (Greenman 1937:92). Except for a couple of human skull discs and a pipe grave offerings were absent.

A number of related mortuary and settlement sites have been recorded in the Windsor area. The Lucier (Wintemberg 1936a) and E. C. Row (Lennox and Molto 1995) sites could be regarded as one and the same site. In the earlier excavations nineteen graves containing twenty-five individuals included a bundle burial involving parts of two individuals along with two additional skulls, one with a cut-out occipital disc and a sawn transverse perforation across the top of the skull and the other with drilled holes. Both skulls had re-articulated jaws and bore traces of "...soil under the skulls *(that)* looked like a mixture of clay and sand" (Wintemberg 1936a:232) and may have represented the remains of clay masking of the skull, another carry-over from the Period IV Hopewell Mortuary Cult along with dismemberment, skeletal modification, earthworks and associated burial mounds (Cook and Farnsworth 1981). Four other skulls from this site had holes drilled in them and the longbones with one of the bundle burials were also perforated. During a subsequent investigation of the same site two bundle burials were excavated, one consisting of an adult female associated with a cremated child, an association repeated at other burial sites in the area (Lennox and Dodd 1991:49). Salvage excavations also exposed a cemetery of six graves containing twenty-three individuals which had to be excavated and reburied on the same day due to native concerns (Lennox and Molto 1995:19). Incomplete bodies and bundle(?) burials were identified as well as adult drilled skulls and in a grave containing a number of bundle burials two fetus or new born cremations were identified. Evidence of cut marks on the bones were indicative of dismemberment. An unusual discovery was that of a young woman whose upper incisors had been extracted and the bone healed-over suggestive of ritual ablation (Lennox and Molto 1995:20). The site in question is situated in an excellent fishing area and was used both as a burial and habitation site. Post mould patterns tentatively suggested longhouses devoid of internal features but were too ambiguous in their demarcation and contents to classify as either habitation or mortuary structures.

The Kreiger site on the lower Thames River, had a burial area on the southern edge of the occupation (Kidd 1954) which contained a multiple burial of eight partially articulated and disarticulated individuals representing both adults and infants. Skulls were arranged around the periphery of the grave pit with the rest of the remains being deposited in the centre. Dismemberment was apparent in the form of articulated spinal columns. Some of the other pits contained human bone, mainly of the hands and feet, suggesting retrieval of the major portion of the body for final burial elsewhere. A 2.5 cm square human skull section, with a drilled hole, was also discovered as well as a dog skull. Dog burials or parts thereof appear to be rare in Western Basin cemeteries although a puppy burial is recorded from the Drymock site on the lower Thames River (Fox 1986:32).

Later 16th century sites, like the Parker Earthwork and Weiser sites, both in the Lake St.Clair region, present certain classification problems. Namely, were the sites habitations or places of ritual? The Parker Earthwork was described in the section on **Settlement patterns** where it was noted that although Western Basin pottery styles dominated only Ontario Iroquois pottery smoking pipes were represented and in considerable numbers. The site's locale is isolated, almost hidden, reducing the likelihood of a later Iroquoian occupation to account for the pipes. Given the presence of the numerous pipes and the paucity of Iroquoian pottery it may be suggested that the occupation would have involved predominantly males. Burial mounds were reported to be associated with the earthwork. Similarly, the Weiser site, with it single, centrally located circular structure (Kroon 1974) and paucity of cultural debris, would appear to have a ceremonial function. As with the Parker Earthwork, Ontario Iroquois pipes were unusually abundant (Stothers et al. 1984).

External relationships:

As with preceding sections **External relationships** will be considered in three parts; first the transition stage from hunters and gatherers into horticulturists, a process which took place from approximately between AD 500 and 1000 followed by the Glen Meyer complex and the Western Basin complex.

The Princess Point Complex

Evaluating **External relationships** during this transitional phase between hunters and gatherers and horticulturists in Ontario has been somewhat complicated by technological horizon styles relating to both the pottery and the stone tool industries which spread abruptly across much of eastern North America. Attempts to establish regional relationships on the basis of rudimentary pottery traits, such as a row of obliques above horizontals executed with the cord wrapped stick plus an encircling row of external punctates which raise interior bosses (Fox 1990), for example, involves a horizon style of pottery traits that can be traced unbroken from the Atlantic seaboard to eastern Saskatchewan. While the diffusion mechanisms underlying such sudden and broad horizon styles are of considerable anthropological interest in their own right the styles themselves are of limited use in differentiating regional populations. Regardless, it is apparent that the earlier trade networks associated with the ritual need to acquire certain kinds of objects as grave offerings was on the wane by Princess Point times. It is speculated that increasing parochialism and the progressive abandonment of earlier pan-ritual ceremonialism were associated with the increasing degree of sedentariness required by an expanding reliance upon horticulture and, in particular, corn farming. Some of the last vestiges of the earlier trade networks are to be seen in a minor trade in marine shell beads from the east coast; specifically in whelk shell columnar beads and marginella beads. Trade in Lake Superior native copper is even less evident, being restricted to the occasional bead and awl (Fox 1990:176). Further, from early Princess Point sites where there is good archaeological context there is no compelling evidence of relationships with contemporary late Point Peninsula complex communities to the east of the Niagara Escarpment. Similarly, there is, as yet, no convincing evidence of technological continuity from the Period IV Saugeen complex west of the Niagara Escarpment into Princess Point. Current archaeological evidence points to an ever increasing degree of regional parochialism despite participation in certain very broad technological style horizons.

The Glen Meyer Complex

Evidence of trade relationships in the form of either East Coast marine shell or Lake Superior copper is even more sparse on Glen Meyer sites than the preceding Princess Point complex (Williamson 1990:300; Wright 1966:39). For example, at the extensively excavated Calvert village a single whelk marine shell bead was recovered (Timmins 1997:147). The recovery of what appears to be a calumet pipe associated with a Carolina parakeet bird skin from the same site, however, does suggest ceremonial connections with southerly groups, perhaps in the Ohio Valley or even into the southeastern United States. Exotic cherts are rare on Glen Meyer sites compared to the use of locally available stone although some Ohio cherts were identified from the Van Besien site (Noble 1975a:24).

Unlike the undefended Princess Point seasonal sites later Glen Meyer relationships with some of their neighbours had obviously turned nasty. This is evidenced by an increasing concern with defence as reflected in the establishing villages in naturally defensible locales, the constructing of multiple palisades and internal defensive works, such as attaching longhouses to the interior stockade with a barricade to create cul du sacs in order to entrap enemy warriors who had breached the outer defenses. Concern with defence extends throughout the entire Glen Meyer sequence from the 11th century to the end of the 13th century. Scattered adult human bone in middens on Glen Meyer sites have been interpreted as evidence of warfare and prisoner sacrifice (Noble 1975a) although such occurrences are so rare as to cast some doubt that prisoner sacrifice and associated cannibalism was a widespread phenomenon. It would appear from the Calvert site settlement patterns, spanning the early to mid 13th century, that the concern with defence increased (Timmins 1997:238).

As reviewed in Chapter 33 western elements of the Ontario Iroquois represented by the late Pickering to Uren portion of the cultural development are believed to have conquered, dispersed, and, in part, absorbed the Glen Meyer communities west of the Niagara Escarpment at the end of the13th century. Relative to the possibility of Glen Meyer refugees seeking asylum with the Western Basin complex (neé) Younge tradition in Michigan it has been observed that "I find it easy to accept the Younge Tradition as being stimulated by either strong influence from Glen Meyer or by the actual movement of Glen Meyer peoples into the area" (Fitting 1970:154-155). Evidence of a protracted conflict, as might be inferred from percentages of diagnostic Glen Meyer pottery on Pickering-Uren sites and visa versa, reflecting the presence of captive women from the villages of both combatants, is not in evidence. Certain general pottery styles, however, were shared by both groups and, in lieu of precise attribute analysis, could obscure such evidence bearing on the evidence of female captives. The King's Forest Park site in

Hamilton was predominantly a Glen Meyer seasonal camp but also contained contemporary Pickering pottery styles (Donaldson 1965a; Fox 1967:26) which not only suggests contacts but also indicates the close physical proximity of the sites of both groups at one time. It appears that the Glen Meyer communities were dispersed during a brief campaign with the conquerors occupying the same specific locales and even actual sites of the conquered such as the Reid site (M. Wright 1978). At this latter site two Middle Ontario Iroquois longhouses were superimposed over the much smaller Glen Meyer houses surrounded by a double palisade.

The Western Basin Complex

There is considerable disagreement regarding the ethnicity of the Western Basin complex. Namely, whether it was Iroquoian or Algonquian. At this point in time, I favour an Algonquian in place development out of the Western Basin complex which would have included elements of the dispersed Glen Meyer populations. This particular scenario is supported by the evidence from the Butler site in Detroit, Michigan (Stothers 1999; n.d.) where distinctive Western Basin, Glen Meyer, and early Ontario Iroquois pottery styles were found together in the same refuse pits. It is proposed here that the site represents a Western Basin occupation which included Glen Meyer refugees and a minor number of Ontario Iroquois women captives. The presence of a cut and drilled human skull fragment reinforces the Western Basin complex association (Stothers 1999:202). Many of the Western Basin complex sites along the lower reaches of Ontario rivers draining into Lake St.Clair also contain significant percentages of distinctive Ontario Iroquois pottery (Murphy and Ferris 1990:228-230), an occurrence which is interpreted here as reflecting a continuation of the conflict between elements of the Ontario Iroquois and Western Basin communities after the dispersal of indigenous Glen Meyer population. By the early 16th century, the Ontario Iroquois had penetrated westward almost to Lake St.Clair (Foster 1990). An abundance of Western Basin style pottery occurs on these frontier Neutral villages situated only 20 to 30 km to the southeast of contemporary Western Basin sites. The bulk of the pottery and all of the pipes, however, are of Neutral authorship (Ibid:65-67). Still, a third of the vessels were assigned to Stother's Sandusky tradition (Foster 1990:Table 4) or the Western Basin complex as used here.

At early 16th century Western Basin sites in the immediate Lake St.Clair region, like the Parker Earthwork and Weiser, an interesting phenomenon is apparent. While the pottery vessels from both of these sites are predominantly Western Basin varieties with a minor amount of Ontario Iroquois pottery the pipes, of which there are unusually high frequencies, were Ontario Iroquois forms (Lee 1958; Stothers et al. 1984:65). Assuming the pipes were contemporary with the pottery vessels then a most unusual association is represented. If, on the other hand, the pipes reflect a subsequent occupation of Western Basin sites by the Ontario Iroquois then it is still unusual, relative to the exceptionally high frequency of pipes, which are associated with men and not women. At the Parker Earthwork there was some superpositional evidence of an increase in the Ontario Iroquois pipes and vessels in a middle level between predominantly earlier and later Western Basin complex occupations (Lee 1958:Fig.4). Whatever the underlying causes surrounding the aforementioned mix of Western Basin and Ontario Iroquois technologies, as reflected in frequencies of the former's pottery vessels versus the latter's pottery pipes, it must reflect a most unusual relationship between the two groups. Less ambiguous was the result of a trace element analysis of distinctive Western Basin complex pottery from the 16th century Ontario Iroquois Lawson site in London and the Western Basin Parker Earthwork site (Trigger et al. 1984). With reference to the Lawson site and the Ontario Iroquois and Western Basin pottery samples the trace element evidence indicated that the latter were not manufactured locally suggesting that the pots were brought to the site by Western Basin captive women, possibly as part of the booty of a war party (Ibid:9-10). The exceptionally high percentage of Fire Nation pottery on the contact period Neutral Hamilton site and other sites in the area (Lennox 1981; 1984) would suggest that women captives routinely were required to bring their pottery vessels and contents to the villages of their captors. In the first half of the 17th century, French missionaries documented events in a war between elements of the Neutral Confederacy and the Fire Nation Confederacy of the Ohio region. In this conflict the Neutral were allied with the Tionnontaté and the Odawa of the Georgian Bay region. It is now evident from archaeological research that only the northern Neutral tribes were involved in the war and not the entire Neutral Confederacy (Lennox 1981 compared to M. Wright 1981). Late pottery styles from the Bear Fort site on the Sandusky River in Ohio and on other sites at the southwestern end of Lake Erie in Ohio (Stothers et al. 1998:Fig.13) closely resemble the alien pottery from the 17th century Hamilton Neutral site (Lennox 1981) and associated sites and is inferred to pertain to the Fire Nation captive women mentioned in the French documents. This distinctive pottery, generally shell tempered and decorated with applique strips, does not appear on Western Basin complex sites in Ontario and thus must pertain to later pottery stylistic developments which took place after the St.Clair region of Ontario had been abandoned. On the other hand, the distinctive nature of the pottery and the absence of prototypes from Ontario Western Basin sites would support David Stothers position that they are representative of his Sandusky tradition with its Mississippian cultural affiliation which was unrelated to the Western Basin complex. The Assistaeronon Confederacy or Fire Nation has been interpreted as a product of the Sandusky archaeological tradition and has been equated with the Macouten who fled westward after their defeat by the Neutral and their allies in the 1640's (Stothers et al. 1998:89). The recently discovered *Novvelle France* map, estimated to date to 1641, shows the Great Lakes and the locations of the neighbouring tribes prior to their dispersal (Heidenreich 1988). A linguistic study of the mainly Huron tribal names on the Map and their modern equivalents in brackets, extending from the end of Lake Erie westward, are as follows: Ontarraronon (Kickapoo); Aictaeronon (Mascouten); Couacronon (Sauk), and Ariatocaronon (undetermined) (Steckley 1990:Table 1). It is these tribes, collectively known as the Gens de Feu or Fire Nation Confederacy, who were apparently at war with some of the Neutral and their allies. As can be seen with the Neutral, however, such confederacies did not necessarily function in war as cohesive entities but, rather, as their own tribal inclinations swayed them. In many respects, such confederacies were mutual non-aggression pacts capable of episodes of cooperation when everyone's self interests were met. Thus, in a similar fashion, the tribes making up the Fire Nation did not necessarily function as a single fighting unit during a war. The suggestion that the Neutral and Fire Nation hostilities intensified due to the European introduced fur trade after AD 1580 (Stothers 2000:78) is simply not feasible given the lack of evidence of European goods in the St.Lawrence Valley and limited evidence from Chesapeake Bay, the presumed sources of European trade. It is more probable that the conflict was a continuation of that initiated at the end of the 13th century by the Ontario Iroquois dispersal of the Glen Meyer complex and the occupation of their former lands. Such long lasting feuds are not unknown elsewhere as evident from the more than 100 year conflict between the southern tribes of the Huron and the western elements of the St.Lawrence Iroquois (Pendergast 1993).

Stothers (1999:207) has proposed that the four tribal groups making up the Fire Nation consisted of the Macouten, Fox, Sauk and Kickapoo. Pottery from the late 17th to early 18th century Bell site, a historically documented Fox village in Wisconsin (Wittry 1963), does not resemble any of the Fire Nation pottery from the mid-17th century Neutral Hamilton site and other Neutral sites of the northern cluster (Lennox 1981; 1984). Nor does it resemble that from the Dumaw Creek site, a 17th century probable Sauk site in western Michigan (Quimby 1966:87-89). The most likely candidate or candidates for the Fire Nation captives recorded in the Jesuit records and from Neutral archaeological sites are the Kickapoo and/or Macouten. The locations of their homelands at the western end of Lake Erie in Ohio on the Novvelle France map, as well as the Ohio archaeological evidence from the same region , best fits the evidence. For example, the Indian Hills sites on a tributary of the Maumee River in northwestern Ohio, has been attributed to the Assistaeronon (Mascouten) while sites on the south-central Lake Erie shore have been assigned to the related Ontarraronon (Kickapoo) (Stothers 1981). Thus, it is probable that, like the Neutral, the components of the Fire Nation Confederacy fought as individual tribal units and did not necessarily involve the entire Confederacy.

Human biology:

Information on **Human biology** gleaned from skeletal material by physical anthropologists is very uneven for the populations considered in this Chapter. Much of the information is in unpublished form or difficult to obtain reports as clearly reflected in the references in a recent article (Spence 1992). Fortunately, what physical anthropological information is available pertains mainly to the period AD 500 to 1000, the transition period from hunters and gatherers to horticulturists. Little information is available in published form regarding the populations of the Glen Meyer complex although the situation is somewhat better with reference to the Western Basin complex.

For the pre-AD 1000 period there are the 9th to 10th century Surma site cemetery (Cybulski 1968), the 10th century Rogers Ossuary (Mullen and Hoppa 1992), and the unpublished description of the ca 9th to 10th century Clarke burial site on Point Pelee (Robertson n.d.). As I participated in the salvage of the latter site in 1952 with J. Norman Emerson, Kenneth Dawson, and Martin Greenwood, I am privy to certain unpublished information. The Surma site cemetery consisted of eleven graves containing a total of twenty-two individuals, only one of which was a child. Little evidence of pathology was identified except for minor traumas and some indication of osteoarthritis and osteophytosis, the latter consisting of marginal boney lipping along the articular surface of the vertebrae. For a succinct illustrated summary of palaeopathology see Anderson 1962a, Chapter XVII. Premortem tooth loss was low and the relationship of dental cavities to attrition was interpreted as being transitional between hunters and gatherers and later horticulturists (Cybulski 1968). Adult male heights ranged from 175 to 178 cm (5'7" to 5'8") and, for females, from 163 to 165 cm (5'3" to 5'4"). The assumption that the twenty-eight individuals recorded from the Rogers Ossuary pertain to a population in transition to becoming horticulturists receives some support from the physical anthropological evidence. For example, there was considerable evidence of dental attrition and, as is the norm in such cases, a low corresponding incidence of caries or cavities. Also associated with the more severe cases of attrition was pulp exposure and subsequent abscesses. In this respect the Rogers Ossuary population resembles the Surma population. Unlike the Surma site, however, all age groups were represented from foetal to old adult with an approximately equal representation of adult men and women. Pathologies, other than dental, were rare but included a possible case of a healed cribra orbitalia associated with severe temporo-mandibular degeneration, osteophytosis, particularly on the lumbar vertebrae, little evidence of osteoarthritis, and some evidence of nonspecific infection. The Clarke burial site was accidentally encountered during the installation of a grounding rod behind a new house on Point Pelee. It consisted of two grave pits containing nine adults, two adolescents, two children, and three fetuses. With the exception of a single bundle burial the adults were primary extended interments. Adults were all young women except for one old man. Grave offerings, per se, were absent. Direct evidence of conflict was represented by an arrowhead embedded in the ventral face of a thoracic vertebrae of an adult female. Some marginella beads, which would have originally fringed the clothing of the deceased, were recorded. Cord impressed pottery sherds were accidentally introduced into the grave pits during the time of burial and permitted an approximation of cultural affiliation and age of the burials. A high incidence of cavities and premortem tooth loss, however, could indicate a later temporal assignment when more corn was being consumed. Stable isotope studies could possibly throw additional light on the importance of corn in the diet of the deceased. In addition to caries and some periodontal disease other pathologies consisted of osteoarthritis and traumas like a healed forearm fracture. Some evidence of hypoplasia in the teeth was also identified being indicative of nutritional stress during the weaning period (Robertson n.d.). The age and sex composition, the arrowhead lodged in a vertebrae, and an unusual breakage pattern of some of the bones is suggestive of a draconian event, like an enemy attack on a defenceless population of mainly women and children with subsequent burial by kinsmen.

The pottery from the Kreiger site (Kidd 1954) on the lower reaches of the Thames River is similar to that from the Bruner-Colasanti site (Lennox 1982) suggesting that the associated graves at the former site would date to the 12th or13th century. Two burial areas consisted of the secondary internment of eight individuals and a disturbed burial of four other individuals. Cavities are recorded as well as mild tooth attrition typical of horticulturists. Cranial morphology has been suggested to exhibit a relationship with Iroquoian populations (Anderson 1968:Table 29) although it is unknown, at this point in time, whether Iroquoian and adjacent contemporary Algonquian populations can be distinguished from one another on the grounds of cranial morphological. Early French records suggest frequent and close relationships between members of these two major language groups and the consequences of interbreeding may have masked physical anthropological differentiation. For instances, there is the evidence of abundant Western Basin pottery on some Neutral sites indicating the presence of large numbers of Algonquian-speaking women and, thus, genetic mixture.

The E. C. Row site burials in Windsor would date to the early 16th century. Unlike the Clarke burial site, all segments of the population were represented but in the form of secondary interments represented, for the most part, by skulls and long bones. (Lennox and Molto 1995). Caries and periodontal disease were identified for both adults and children but was not nearly as severe as in the Pickering population at the late 13th century Bennett site in the Niagara Escarpment. The incidences of cavities at the E. C. Row site compared to the Bennett site were 0.0% versus 13.6% for deciduous teeth and 19.6% versus 30.2% for adult teeth (Patterson 1984). The foregoing figures suggest that there was a far greater amount of corn consumption more than 200 years earlier to the east among the Ontario Iroquois than was the case with the Western Basin populations of the Lake St.Clair region. Bone infection, indicative of nutritional and disease distress, was also common among the E. C. Row population. It was noted that dehiscence of the tympanic plate, a genetically determined skull attribute, was absent while being a common trait among Iroquoians and was "...highly suggestive of distinct biological differences between the E. C. Row sample and Iroquoian populations" (Lennox and Molto 1995:26). On the other hand, of the eight skulls from the Clarke site where the aforementioned trait could be observed half possessed the morphogenetic attribute (Janet Young, Research Associate, Archaeological Survey of Canada, Canadian Museum of Civilization: personal communication). Lucier site burials consisted of eleven bundle burials, nine torso burials, two primary flexed burials, two cremations, and a rearticulated body (Lennox and Molto 1995:26) with a complete pottery vessel occurring with one of the primary burials (Figure 131). Torso burials consisted of articulated axial skeletons to which were added the hand and foot bones but it is unknown whether the secondary burials of skulls and longbones at the associated E. C. Row site are related. Pathologies were identified as periostitis, infection, and mostoiditis. It must be pointed out that the Lucier and E. C. Row sites are actually one and the same site relating to excavations in the 1930's and the 1980's, respectively.

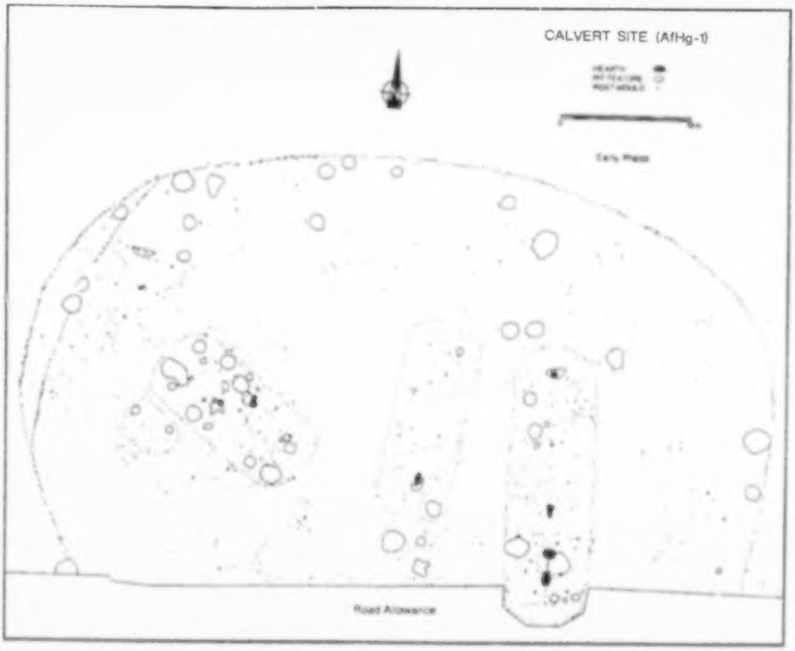
Inferences on society:

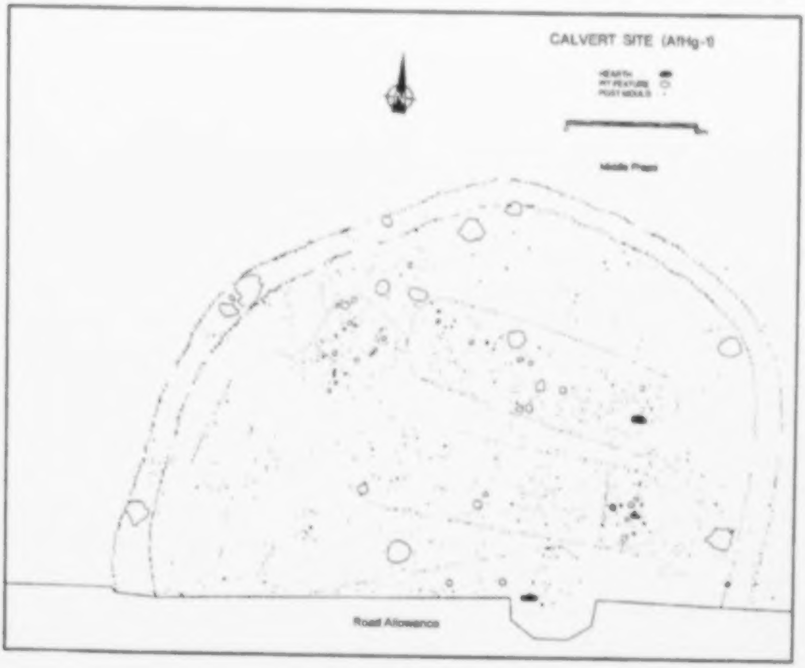
Archaeologically identifying the cultural indicators involved in the transformation of hunting and gathering societies into societies dependant upon horticulture is not a simple task. Certainly the physical reflections of the transformation process can be identified, such as changes in settlement patterns, dental pathology, and cultigen recoveries as well as carbon isotope studies related to diet, but the social impact of such changes and their varying regional intensities severely test the admittedly limited capabilities of archaeology to tease social information from the mute subject matter. During the critical period of transition, between AD 500 and 1000, there were likely a number of different groups experimenting with horticulture. One could speculate that the attraction to horticulture would have been more enticing to those populations occupying less favourably endowed environmental regions relative to natural food productivity than more fortunate neighbours. Long before this period people were not only gathering wild plant foods but were also growing certain cultigens, such as squash and sunflower. Thus, the issue is really when does *corn horticulture* become a major player in the food economies of the various regional societies? Recent research in the Grand River Valley-Hamilton area has convincingly demonstrated experimentation with corn horticulture as early as AD 500 (Crawford et al. 1998; Stothers 1977). However, if the estimated date of the Miller site east of Toronto to the 9th or 10th century is correct, then fully developed horticultural villages, dependant upon corn, already existed at an early period and, as such, the transition from hunters and gatherers to horticulturists could well have been earlier and more rapid east of the Niagara Escarpment. Current evidence suggests that the first established Glen Meyer horticultural villages date to the 11th century, or, at the earliest, the 10th century (Williamson 1990:Table 9.2). The Ontario information both east and west of the

Niagara Escarpment suggest that established village life occurred earlier than in adjacent regions like New York State. Prior to the archaeological recognition of established village life it is likely that major social change had already taken place in the societies involved. Fundamental changes would have involved the following: women becoming the main food producers replacing men in this capacity; men being freed, to a significant degree, from former subsistence activities permitting increasing time for other activities such as politics and warfare; the requirements of intensive corn horticulture for sedentary residence and organized female work groups; the relationship of the former to the evolution of a matrilineal descent system and matrilocal residency in multi-family lineages in communal longhouses; and the establishment of all of the complex social controls required for relatively large groups of people to live collectively in harmony. Archaeological evidence of contemporary dual cemeteries in proximity to one another during Period IV suggest the early existence of moieties and, thus, clan systems which had to be in place long before the introduction of corn horticulture. To judge from the events at the end of the 13th century elements of the Ontario Iroquois had developed the capability to organize confederacies which functioned not only as mutual nonaggression pacts but also as military alliances capable of coordinated campaigns. In short, within a very brief period of corn becoming the economic foundation of subsistence all of the core elements of later Iroquoian society were in place. If one was of a theoretical bent one could equate these dramatic changes to the theory of punctuated equilibrium in biological evolution except, in this instance, the driving forces were cultural adjustment related to the diffusion of corn horticulture and its requirements rather than being based upon genetic responses to environmental forces. It would appear that the Glen Meyer communities adopted some of the social elements of their eastern Ontario Iroquois neighbours but not, it is speculated, the ability to cooperate as major groupings of allied villages for the purposes of mutual defence and offence. It is further speculated that it was this weakness that led to their sudden downfall at the end of the 13th century in the face of the first confederacy organized to achieve specific military and territorial objectives. Interestingly, there is little evidence of prolonged hostilities preceding the draconian invasion from east of the Niagara Escarpment in the form of significant reciprocal pottery from the villages of the two combatants. Additional lines of evidence would suggest that the Glen Meyer communities were not effected to the same degree as their Ontario Iroquois neighbours to the east by the horticultural revolution. For example, while Glen Meyer and contemporary Pickering villages tend to be the same size, averaging 0.5 ha or 1.2 acres (Williamson 1990:Table 9.1), the Glen Meyer longhouses are smaller in all dimension relative to those of their Pickering neighbours (Wright 1992:Table 2) suggesting a lesser degree of family and lineage social integration. More Glen Meyer villages also are characterized by sequential building stages indicative of longer periods of occupancy of a single locale and inferentially less intensive corn horticulture and/or population densities that would require more frequent periodic village movements. Finally, the emerging pattern of removing the bodies of kinsmen who died in the villages in the winter for final burial at warm weather fishing sites situated on large bodies of water (Spence 1994) suggests the presence of a stronger attachment to earlier hunting and gathering traditions than was the case with Pickering. Glen Meyer burial practices also reflect a tendency to retain earlier nuclear family burial patterns in contrast to increasing evidence of large socially integrating communal burial among the Pickering communities. In short, it appears that Pickering social life was far more impacted by the adoption of horticulture than that of their Glen Meyer neighbours. Undoubtedly a major factor in some of the foregoing differences between Glen Meyer and Pickering was the fact that the former's territory was more richly endowed with natural resources than the latter's and would have accommodated, to a greater extent, retention of pre-horticultural subsistence practices.

With reference to the Western Basin complex it has been observed that the "...populations never achieved the level of tribal organization, nor did they ever develop formal village life. Instead, the Western Basin Tradition was characterized throughout each of its sequent phases - Gibralter, Riviere au Vase, Younge, and Springwells - by band society groups which practiced an annual settlement-subsistence cycle of warm weather population coalescence and cold weather dispersal of constituent family groups" (Stothers and Bechtel 2000:39). Thus, the development of established village life appears to have begun in the east and faded in level of intensity further west where earlier settlement pattern practices were retained. If this should eventually be demonstrated to have been the case then the original horticultural revolution began to the east of the Niagara Escarpment, which is in itself a paradox given the more favourable corn growing climate to the west. Perhaps societies to the east, with less well-endowed natural resources, had a greater incentive to become incipient and then reliant horticulturists and, finally, territorial aggressors.

In terms of Glen Meyer village settlement patterns it has been argued that the disorganized arrangement of dwellings relative to one another, as well as the overlapping of dwellings, reflect a lack of formal village government with weak matrilineages and low populations (Williamson 1990:306). The reoccupation of a village site leading to superimposed dwellings has little to do with village government, per se, and, as has been pointed out, the arrangement of village plans through various sequential occupation stages is not a product of disorganized or autonomous individual households doing their own thing (Timmins 1997). The point is well taken, however, that the archaeological evidence of women and children participating in the seasonal hunting and gathering camps surrounding the base village would suggest that any matrilineal social structure change must have been in a state of transition (Williamson 1990:317). It may be added, regarding the gender make-up of the camps occupied during the corn planting, growing, tending and harvesting seasons, that the development of corn horticulture had not yet achieved its intensive phase involving the full and undivided attention of women work groups.


CALVERT SITE (AfHg-1)
Early Phase
Road Allowance


CALVERT SITE (AfHg-1)
Middle Phase
Road Allowance

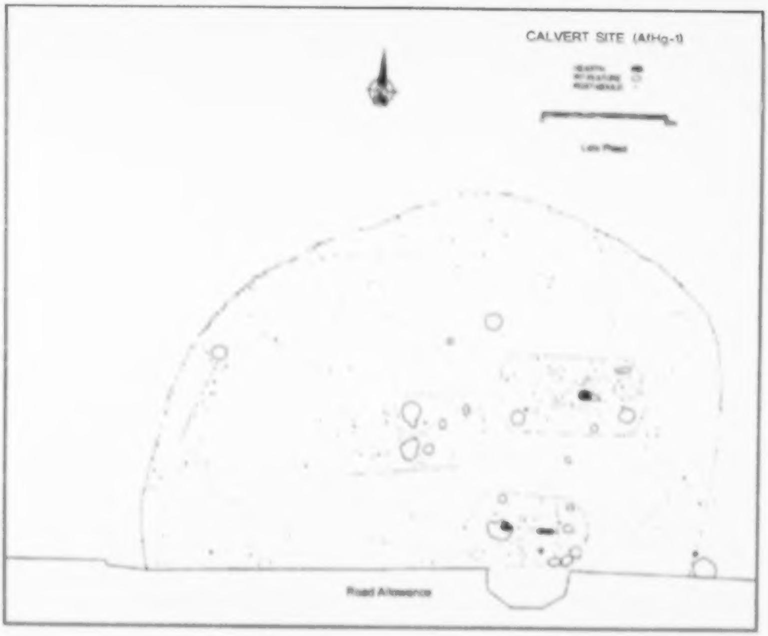


FIGURE 134: SUCCESSIVE BUILDING STAGES OF A GLEN MEYER VILLAGE The Figure illustrates the three major sequential building stages of the Calvert site; referred to as Early, Middle, and Late. (Composite reproduced from Timmins 1997:Figs.5.9, 5.10, and 5.11)

Glen Meyer villages tend to cluster in specific areas and presumably this physical proximity reflects some degree of relationship even if only an informal one. Regional technological variability between the clusters further indicates that each cluster represented some kind of a local development. This has led to the suggestion that the clusters represent the formation of distinct regional tribal units (Timmins 1997). This is certainly a possibility, particularly if intermarriage between the communities was the rule, although it does not necessarily presuppose that the said tribal units were capable of functioning effectively beyond the component village level of social organization. The ubiquitous presence of defensive works involving both palisades, internal village defensive structures, and the selection of easily defended natural locales, point to hostilities but whether they be with neighbouring villages or more distant foes is an unknown. In all cases the defensive works were relatively flimsy affairs but it is important to note their presence during the entire Glen Meyer sequence from AD 1000 to the end of the 13th century indicative of endemic hostilities. Hostilities with distant villages as reflected by alien pottery styles does not exist until the end of the 13th century. Rather the admittedly limited archaeological evidence would suggest that hostilities likely involved one Glen Meyer community against another. Certainly any inter-cluster hostilities among the Glen Meyer communities would have assisted the task of the Pickering-Uren invaders. Despite the settlement pattern evidence of endemic hostilities there is little archaeological evidence of prisoner sacrifice in the form of cannibalized adult human remains in middens or implements manufactured from human bone. Indeed, the only evidence of what could be construed as prisoner sacrifice comes from the Van Besien site (Noble 1975a:43).

Burial practices, such as the placement of a number of secondary burials in a single grave pit, suggests the collective reburial of kinsmen. Unfortunately, the possibility that the skull and long bones from grave pits at the Lucier site pertain to the contiguous E. C. Row site torso burials cannot be confirmed as the latter burials had to be excavated, analysed, and reburied on the same day in respect to native concerns. It should be noted that the Lucier and E. C. Row sites are one and the same with the former excavated by William J. Wintemberg in 1935 and the latter salvaged by the Ministry of Transport (Lennox and Molto 1995) in 1984. In fact, Wintemberg's burial excavations obviously pertain to the same cemetery area salvaged in 1984 (Lennox and Molto 1995:Fig.3). Either the torso burials from one part of the cemetery belong to the skull and long bone internments from another part of the cemetery or the two instances are unrelated meaning that in the same cemetery some burials had their skulls and long bones removed for final burial elsewhere while other burials of skulls and long bones were brought from somewhere else to be interred in the same cemetery, a somewhat unlikely scenario. Given the elaborate burial ceremonialism of late 15th to 16th century Western Basin complex with its skull and long bone modifications related to secondary burial ritual and its early roots in the Period IV Hopewell Mortuary Complex, such complexity is only to be expected. On the other hand, if a moiety system existed whereby one group of clans was required to bury the dead of another group of different clans and that this responsibility related to the final burial of the remains then such a situation as seen at the Lucier-E. C. Row burial site could be accounted for. The possibility of the existence of a moiety might even be reflected in the placement of two adjacent grave pits with multiple internments at the Clarke burial site on Point Pelee.

Western Basin mortuary sites also functioned as centres for "...trade and exchange, obtaining marriage partners, and renewing social and political alliances" (Stothers 1999:202). Burial areas are directly associated with these warm weather camp sites but not, to date, with what are believed to be major winter site occupations like Bruner-Colasanti (Lennox 1982). In this respect the former resemble the Glen Meyer pattern of favouring final burial adjacent to major bodies of water. Such sites would also represent the largest aggregation of people during the year and would have been most amenable for reaffirming social relationships, alliances and solidarity.

The unusual characteristics of the 16th century Parker Earthwork and Weiser sites (Lee 1958; Stothers et al. 1984) have already been noted. Among a number of traits from these sites not found on usual village habitation sites are the exceptionally high frequencies of Ontario Iroquois pipe fragments in association with predominantly Western Basin complex style pottery. While some Ontario Iroquois pottery was present on both sites it was a minor entity compared to the pipes. High frequencies of smoking pipes on Ontario Iroquois villages in the Niagara Escarpment area have been interpreted as one of the indicators of alliance formation between villages (Finlayson 1998:410). One could propose a number of scenarios such as Western Basin warriors taking pipes from slain enemies given the religious connotations attached to pipes. There is no question that Ontario Iroquois village defensive strategies were more effective than those of the Western Basin complex. Why, in these instances, alien pipe styles were involved is a mute question. If, on the other hand, the pipes reflect an Ontario Iroquois reoccupation of former Western Basin sites then the question still has to be asked why the reoccupation was only represented by a male item of material culture. Whatever the explanation for the Ontario Iroquois pipes on the Parker Earthwork and Weiser sites it must pertain to a most unusual relationship between the Western Basin and the Ontario Iroquois. In short, these sites may represent ceremonial locales rather than just being unusual habitation sites. Settlement pattern evidence from both sites are also unlike what one would expect from normal habitation sites.

Limitations in the evidence:

As has been emphasized throughout this Chapter and as reflected in its title there are major problems relating to the number of actual cultural constructs involved and the ethnicity of said constructs. While the Direct Historical Approach cannot be applied in the normal fashion to the Glen Meyer complex, which ceased to exist after the late 13th century, its technological and mortuary similarities to the Western Basin complex, which did survive into the European contact period, would suggest an Algonquian ethnic identity rather than the former assumed Iroquoian one (Wright 1966). In this respect, there is a need for a complementary methodological approach, perhaps to be called the Indirect Historical Approach, which would accommodate those instances where an archaeologically identified group did not survive into the time of European chroniclers but whose cultural systems so resemble those of groups which did it permits certain assumptions regarding ethnicity. Most Ontario archaeologists would support the view that the Western Basin complex evolved into elements of the early 17th century Fire Nation, an Algonquian-speaking group (JR XXI:125) documented by the French (Murphy and Ferris 1990). Others believe that the Western Basin cultural development was truncated around the beginning of the 14th century by a Mississippian cultural population intrusion from the south referred to as the Sandusky tradition. In this scenario the Western Basin people were Iroquoians whose scattered remnants joined their kinsmen in the east. People associated with the Sandusky tradition then become the Fire Nation (Stothers 2000). A serious limitation in attempting to resolve this ethnicity versus cultural continuity or discontinuity debate is the nature of the archaeological data or, more appropriately, the lack of it. Relevant to the war between elements of the Fire Nation and elements of the Neutral along with their allies, the French documents record that in 1640 the Neutral took 100 prisoners, in 1641 a Neutral army of 2,000 took another 170 prisoners, mainly women and children (JR XXI:195), and, in 1643, a Neutral army of 2,000 besieged a palisaded Fire Nation village for ten days and brought back 800 prisoners (JR XXVII: 25; Trigger 1976:624). The archaeological problem is that though there are an abundance of first half of the 17th century Neutral villages, some with considerable evidence of Fire Nation captives (Lennox 1981; 1984), equivalent kinds of sites have not been discovered in either northern Ohio or Michigan. Indeed, European contact period Fire Nation villages (Stothers et al. 1998; 1994) can only be called ephemeral in comparison to their Neutral counterparts. As a result of the weakness of a creditable comparative body of data most interpretation has been based upon pottery styles and, as a result, has been long on speculation and weak in substantive evidence (Stothers 2000). A key factor in the elusive nature of 17th century Fire Nation villages has undoubtedly been their destruction in the 19th and early 20th century due to urban developments and associated activities which were particularly severe in the Detroit and Windsor areas (Fitting and Zurel 1976; Murphy and Ferris 1990). A further limiting factor involving interpretations based upon pottery styles is the fact that most of the pottery has come from multi-component sites with considerable mixture of the archaeological deposits. Key to cultural reconstructions have been multi-component sites, such as the Riviere au Vase site in Michigan (Fitting 1965), which brings with it with all of the inherent weaknesses of collections lacking specific archaeological contexts.

In addition to natural destruction of sites, such as the severe erosion of seasonal fishing camps along the north shore of Lake Erie, are the impacts of urban expansion, road construction, and farming practices. For example, one of the largest known Glen Meyer villages, the Goessens site, was subsoil ploughed for tobacco fields although, in this particular instance the new owner of the land was distraught when he learned that he had inadvertently destroyed a major archaeological site because of ignorance of its existence and was upset someone had not informed him of the site's existence. Communication between land owners and archaeologists has only slightly improved over the subsequent years. Beyond the physical destruction of sites are other limitations inherent in certain analytical and interpretational mind-sets which, in this writer's view, have further clouded the already murky waters. For example, there has been an unwarranted faith placed in the chronological precision of radiocarbon dates in order to establish a fine-tuned chronology. There has also been an uncritical acceptance of certain poorly defined cultural constructs like Couture and Sandbanks (Smith 1997b) and the lumping of classificatory units like the Middle Ontario Iroquois Uren substage with the Glen Meyer complex (Fox 1976:173) without providing substantive justification for such an adjustment. While recent criticisms of the limitations inherent in earlier settlement pattern studies of Glen Meyer, such as a neglect of feature analysis, differentiation of house structure types, and a lack of attention of the time depth represented at many sites (Timmins 1997), are valid it must in fairness be pointed out that much of the archaeological evidence amenable to a focus on community organization and change are a relatively recent product. Early research on Glen Meyer focussed on acquiring cultural debris samples from middens (Lee 1951; 1952) and not settlement pattern floor plans. There has also been the widespread problem of relying on secondary sources which has resulted in questionable conclusions. For example, of the seven rim decorative techniques listed as being absent from the Goessens site (Timmins 1997:Table 8.5) four were, in fact, qualified and quantified in the original analysis of the site sample (Wright 1966:Part I).

On a positive note, the Glen Meyer/Western Basin culture construct, like other horticultural groups in the lower Great Lakes and St.Lawrence Valley, has had a heartening amount of archaeological ink spilled on its behalf. This includes a substantial body of information derived from cultural resource management projects. Innovative and sophisticated approaches, both in terms of excavation strategies and methods of interpretation, have characterized much of this literature. This has been particularly so with reference to **Settlement patterns** which, of all the cultural systems considered, is undoubtedly the best indicator of when the corn farming hook was firmly set into the cultural fabric of the societies involved. What is apparent is not only the speed with which major social changes took place as a direct consequence of acquiring a reliable year-round food supply in the form of corn but also the adaptability of people to effectively accommodate the complex demands required by the transition from hunting and gathering to a corn horticulture economy. In particular, these changes involved adapting to an enforced sedentary village life and all the social control mechanisms required to maintain harmonious relationships among large groups of people. No doubt during this period of transition there would have been fond reminiscences of the 'good old days' of seasonal forays and the variety and periodic abundance of meat in the diet. Ultimately, the very fact that I have even been able to attempt a synthesis of the evidence and that the synthesis could consider such a broad range of facets of culture has to reflect to the credit of researchers and the work being done. There is no doubt that cultural resource management initiated excavations have been responsible for a much expanded view of the events which preceded the appearance of Europeans. Publications, both technical (Williamson 1998) and popular (Williamson and MacDonald 1998), have resulted from the provincially legislated cultural resource management requirements. There has also been Finlayson's massive 25 year research project in the Niagara Escarpment which has elevated settlement pattern studies to the level of the study of individual communities through time and space and their relationship to other communities (Finlayson 1998). As the data base expands and the ability to abstract cultural pattern and phenomenon increases the discipline of archaeology will be able to adopt a more anthropological perspective to its subject matter. Regarding raw data, still more needs to be done to get the mass of 'grey literature' resulting from cultural research management projects into print where it can serve its logical and ultimate purpose of providing an expanded appreciation of the rich pre-European archaeological history including the processes leading to the development of complex farming societies from that of earlier hunter and gatherer societies.

CHAPTER 35

NORTHERN ALGONQUIAN CULTURE

Précis:

With a number of the cultures considered in this Volume the Direct Historical Approach can be applied directly to specific archaeological sites in order to relate them to particular ethnic populations documented by early European observers. To initiate the method an archaeological site producing European trade goods, such as glass beads, iron tools and brass kettle scraps reworked into tools, recovered in association with native technology, such as pottery, stone and bone tools, can then be attributed to a particular group of native people recorded in the same geographic region in the documents of missionaries, traders, and explorers. On occasion, the European descriptions are sufficiently detailed to actually equate the archaeological site with a specific recorded native village. More often, however, the identification of archaeological sites with any particular group of people is of a more general nature whereby sites containing the European items and occurring in the approximate geographic region of the historically documented ethnic populations are assumed to pertain to said ethnic group. In the next step, sites lacking European goods but in the same general area and characterized by a similar native technology are assumed to represent the sites of the ancestors of the occupants of the sites with European items. A series of site relationships can then be traced down through time using a comparative approach called seriation which traces the technological relationships between a number of sites. While assemblages at the beginning and the end of this process may not resemble one another as long as there is an unbroken chain of association from late to early the assumption is made that the archaeological history of a particular group of people or related people is being traced back through time. As has been aptly noted, however, applying the Direct Historical Approach to horticultural Iroquoian tribes like those of the Huron is not equivalent to applying the same approach to the far more ephemeral archaeological remains of the highly mobile and interrelated hunting bands which composed, for example, the Ojibwa (Mason 1976). In this respect, the application of the method to the Northern Algonquians is of a more ephemeral nature than was the case with the horticulturists settled in their permanent villages.

The cultural designation Algonkin or Algonquin is derived from the Malecite word Algoumequin meaning "they are our relatives or allies". The term was first heard by the French at Tadoussac in AD 1603 (Day 1972). There has been understandable confusion resulting from the anthropological use of the words "Algonquin" and "Algonquian", with the former pertaining to a culturally distinct grouping of Algonquian-speaking people who at European contact occupied a large area centred on the Ottawa River drainage. In contrast, the term "Algonquian" by the addition of the single vowel 'a' has a dramatically different meaning referring as it does to a widely distributed language family composed of "...three dozen or more languages" (Foster 1996:97). Northern Algonquian culture, as used in this work, incorporates from east to west the Beothuk of the Island of Newfoundland, the Montagnais-Nascapi of most of northern Québec and Labrador, the Cree of northwestern Québec, northern Ontario, and most of central Manitoba and Saskatchewan into the edge of northeastern Alberta, the Algonkin of southwestern Québec and eastern Ontario, and the Ojibwa of the Upper Great Lakes and southeastern Manitoba. The Siouan-speaking Assiniboine of southwestern Manitoba and southeastern Saskatchewan appear to have been relatively recent arrivals from an area to the southeast in what is now Minnesota.

The distribution of related Algonquian-speaking Northern Algonquian people presented in Map VI essentially duplicates that given in volumes 6 and 15 of the Handbook of the North American Indians. Finer linguistic divisions appear in the aforementioned Handbook volumes. For example, in the Subarctic volume (Helm 1981) going from east to west the following groups were provided with individual treatment: Montagnais-Nascapi; East Main Cree; Attikamek; West Main Cree; Northern Ojibwa; Lake Winnipeg Saulteaux; and Western Woods Cree and in the Northeast volume (Trigger 1978a) the same sequence was Beothuk, Algonkin, Nipissing, Ottawa, Southwest Chippewa, and Southeast Ojibwa. Only the geographical distributions of Late Palaeo-Eskimo and Inuit cultures in the Arctic or Northern Athapascan culture of the northern Subarctic can approximate the landmass occupied by the Northern Algonquians. At the time of European contact this enormous territory was home to innumerable bands of highly mobile Algonquian-speaking people. From a linguist's perspective the area under consideration, exclusive of the Island of Newfoundland, can be divided into two major branches of a related Algonquian language family: Cree to the north (the Cree, Montagnais, Nascapi [Innu] dialects); and Ojibwa to the south (Chippewa, Saulteaux, Ottawa, and Algonkin dialects) (Rhodes and Todd 1981: Figs. 1 & 2). With the inclusion of the Beothuk of Newfoundland the territory occupied incorporates more than 4,000 km from east to west with north-south spans approximating 1,000 km. While the Beothuk linguistic evidence is equivocal, despite European contact from AD 1497 to AD 1829 when Shanawdithit the last Beothuk in Newfoundland died (Howley 1915), the archaeological and ethnographic evidence, in conjunction with the linguistic data, provide ample reason for adding the extinct Beothuk to membership in Northern Algonquian culture. Archaeological evidence, for example, indicates a clear relationship of the latter to the Montagnais-Nascapi of the adjacent mainland. Indeed, if there had never been historical documentation of the Beothuk and relationships were to be only based upon archaeological evidence there is little doubt that the Beothuk would be associated with the Montagnais-Nascapi of eastern Québec and Labrador. The narrow Strait of Belle Isle presented no obstacle to the highly proficient Boethuk maritimers (Howley 1915:48; Robbins 1989:28). A number of early European documents refer to the Strait of Belle Isle between the Island of Newfoundland and the mainland as a major native communication route. While I referred to Shanawdithit was the last Beothuk recorded in *Newfoundland* there are a number of good reasons, including native oral tradition, to believe that some elements of the Beothuk did not become extinct but simply crossed the Strait of Belle Isle to merge with their related cousins the Montagnais-Nascapi (Renouf 1999a:416).

There are a number of factors, namely physical geography and environment, ecology, and culture history, which can account for the exceptional geographic distribution of the Northern Algonquians, a distribution apparent in the archaeological, ethnographic, and linguistic records. Two vegetation provinces dominate the area, Lichen Woodland and Boreal Forest with Great Lakes-St.Lawrence Forest and, to a lesser extent, Parkland vegetation provinces along the southern margins (McAndrews et al. 1987: Plate 4). Environmentally determined resource composition and richness and, thus, human population densities, decrease as one advances from the mixed hardwood and softwood forests of the Great Lakes-St.Lawrence Forest vegetation province into the Boreal Forest and, finally, the Lichen Woodland. The area is also dominated by the glacially exposed Pre-Cambrian rocks of the Canadian Shield, except for the Island of Newfoundland which represents the northernmost extension of the Appalachians. Throughout the Canadian Shield the interconnected river and lake chains of the St.Lawrence River and Hudson Bay drainages and, to a lesser extent, the Mackenzie River drainage, functioned as major water highways for people. As could be anticipated within such a massive territory subsistence opportunities were highly variable. In Newfoundland, the Gulf of St.Lawrence, and the Labrador coast sea mammals, particularly seal, were of importance while in southern Manitoba and adjacent Ontario wild rice, sturgeon, and in some areas, bison were available. Without the combined presence of caribou and fish, however, much of this enormous territory of approximately four million square kilometres could not have supported human life. Fish, in particular, were essential to survival given that it represents the most predictable and, thus, dependable food source. In contrast, the caribou herds of the Lichen Woodland and Boreal Forest could appear suddenly in unbelievable abundance and then disappear just as quickly. Caribou populations, unlike fish, are also subject to major population fluctuations. Endemic forest fires, particularly in the coniferous forests, burn-off enormous areas followed by plant successions which favour certain species over others. For example, moose flourish on the young poplar browse of the new growth forest versus caribou who rely upon the lichens of the old growth forest. Thus, the major ungulates which provided not only meat and fat but also hides for clothing, tent covers, sleeping robes, sinew for sewing, and bone and antler for tools would fluctuate in availability through time and space as erratically determined by successive forest fires and other factors. Within such a potentially unpredictable food supply environment, exclusive of fish, the flexible social structure of the Northern Algonquians was superbly adapted to adjust to all eventualities. The material culture consisted mainly of wood, bark, and hide items paramount among which were bark canoes, toboggans, snowshoes, and the wide range of sophisticated snares, dead-falls, and other traps. It is important to note that none of the foregoing core elements of technology survive in the archaeological record. The environmental constraints faced by the Northern Algonquians also discouraged significant external alien intrusions prior to the Europeans except along the southern margins of their territory (Wright 1981a:86). A succinct environmental and archaeological review of the Subarctic is available (Pilon 2001).

It follows that within such a geographic expanse numerous regional variants of the culture existed. While it would be descriptively convenient to divide Northern Algonquian culture into five geographic areas designated Eastern, Northeastern, Southeastern, Southwestern, and Northwestern such an classificatory abstraction would tend to create a false impression of discrete population units when, in fact, all such areas were characterized by highly permeable margins with their neighbouring kinsmen. In speaking of Algonkin archaeology in the Ottawa River drainage it has been aptly observed that "Leurs établissements et la majeure partie de leur culture matérielle sont semblables à ceux qu`ulitisaient les Cris, les Montagnais, les Nipissings, les Odawacs et les divers groupes Objibways" (Côté 1993:53). Much of the recognized *archaeological* cultural discreteness within the various regional expressions of Northern Algonquian culture is based solely on whether pottery vessels were present and, in particular, to what particular pottery tradition the vessels belonged. Determining ethnicity from archaeological materials is a hazardous exercise and particularly so when one element of material culture is so heavily relied upon. The Algonkins, for example, shared in the same pottery tradition, albeit with less intensity, as their Ontario Iroquois and St.Lawrence Iroquois neighbours. Despite sharing the same general pottery tradition Algonkin pottery can be differentiated from Iroquoian pottery when subjected to detailed attribute analysis. The Montagnais-Nascapi, on the other hand, only erratically and marginally accepted pottery. Only western elements of the Montagnais shared the St.Lawrence Iroquois pottery tradition to any extent. On the other hand, while the Cree, like their eastern Montagnais neighbours, largely rejected pottery their western Cree neighbours developed a unique pottery tradition found throughout much of northwestern Ontario, Manitoba, and north-central Saskatchewan into Alberta. Pottery was a product of female manufacture and the distributions of different pottery traditions across the Canadian Shield provide evidence of female mobility whereby women have gone to live in their husband's country. Thus the major importance of pottery is as an indicator of inter-band relationships which, in turn, is an important reflection of the mutual support social infrastructure, bonded by blood, so necessary in a region of periodic unreliable resources. If you were a member of a band where the caribou have failed to appear during the fall-winter hunt you and your community could still rely on assistance from neighbouring more fortunate bands, particularly where your sister resided with her husband. The next winter or two it could be the turn of your community to return assistance in kind. This represented a very effective insurance mechanism which almost certainly had deep roots in the region from earliest times.

Different pottery traditions each had core areas of development and diffusion and, therefore, indicate the scope and direction of mutual support among the respective communities. There are a number of these pottery traditions. In Northern Ontario alone the Blackduck pottery has been equated with the northern Ojibwa, the Selkirk pottery with the western Cree, the Macinac pottery, related to Western Basin culture (see Chapter 34), with the southern Ojibwa, Huron-Tionnotaté pottery of the Ontario Iroquois with Algonkins, and Peninsular Woodland pottery with Sauk (Dawson 1977:174), although the latter more likely pertains to the Potowatami. Despite the fact that all of these pottery traditions had core areas of concentration and development they tend to be found mixed together on sites though the mix "varies roughly in direct proportion to the distance from the several heartlands" (Dawson 1977:175).Unlike pottery style characteristics the rest of the archaeological technology is strikingly similar, except for an eastern variant in the Gulf of St.Lawrence region including Newfoundland and Labrador.

Taxonomies based upon technology are a particularly vexing problem in the Canadian Shield. In one evaluation it is aptly noted that "C`est pourquoi les taxons perdent souvent, avec la multiplication des connaissances leur utilité discriminante originelle" (Clermont 1998:51). There is some regional taxonomic merit in Clermont's suggestion that the appearance of pottery be used to establish a Sylvicole du Bouclier (Shield Woodland). This, however, would result in contemporary non-pottery users having to be called 'Archaïque du Bouclier'. All taxonomies are heuristic devices which force an amorphous reality into manageable boxes and, with reference to archaeology, are often in conflict with a demonstrable geographic and temporal cultural fluidity which refuses to be boxed-in by such devices of convenience (Wright 1999a).

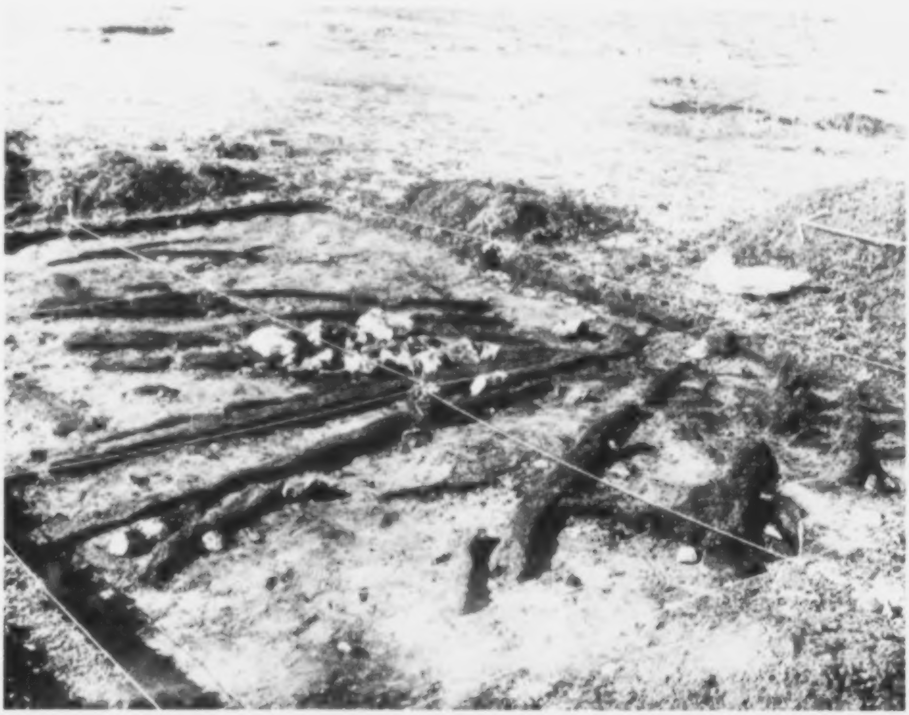
The regional expressions of Northern Algonquian culture, for the most part, developed in place from Period IV (1,000 BC-AD 500) ancestral bases and led to the various northern Algonquian-speakers encountered by European in the late 15th to early 18th centuries. Although a matter of some dispute it appears that the Island of Newfoundland was not occupied by the ancestors of the Beothuk until shortly before AD 500, an event which roughly correlated with the disappearance of the Late Palaeo-Eskimos from the Island (Renouf et al. 2000). The ancestral roots of the Beothuk appear to relate to Period IV developments along the north shore of the Gulf of St.Lawrence and the Labrador coast. These maritime adapted people likely crossed over the narrow Strait of Belle Island between Labrador and Newfoundland at a time of warming climate and when there was possibly less competition for the sea mammal resources from the local Late Palaeo-Eskimo occupants although there is some evidence of contemporaneity. Similarly, the expansion of the Northern Algonquian bands throughout much of Saskatchewan and adjacent Alberta, who would become the westernmost Cree, appears to have occurred around AD 1000. Their Period IV ancestral roots were in north-central Manitoba and adjacent Ontario.

Northern Algonquian technology, except for pottery and pipes in some regions, is very similar across the entire region. An exception is the technology of the Beothuk-Montagnais-Nascapi which can be technologically distinguished from Northern Algonquian technology to the west; namely the Algonkin-Ojibwa-Cree. In a majority of instances the naturally acid soils have destroyed all bone and, thus, technological considerations based upon manufactured materials must rely largely on the stone tool assemblage and, regionally, on the characteristics of a number of different pottery traditions or the lack of same. The east-west split of Northern Algonquian technology is also supported in large part by the distribution of rock art to the west and evidence of maritime sea mammal hunting to the east.

Direct evidence of subsistence is often sparse or lacking for a range of reasons and not only due to the acid soils. For example, evidence of a Beothuk occupation in the interior of the Island of Newfoundland prior to European occupation of coastal regions is practically non-existent. In AD 1810, however, there is documented evidence of elaborate interior caribou pounds and drive lines, as well as large food storage buildings along the Exploits River (Howley 1915:69-70). This could suggest that a once important winter interior caribou hunt is still largely invisible to archaeological field methods. Such a proposition, of course, assumes that the 19th century interior caribou adaptation had precontact equivalents and was not a direct product of Europeans cutting off the Beothuk from coastal resources. The problem of archaeological visibility is highlighted by the limited nature of evidence from early 19th century interior Nescapi caribou processing sites in Labrador (Loring 1997). Similarly, the importance of the wild rice or manoomin in Ojibwa (*Zizania aquatica*) to Northern Algonquian groups occupying the Boundary Waters region between Ontario and Minnesota and southeastern Manitoba has left only the vaguest of direct archaeological evidence, such as a limited number of thrashing and parching pits and even more scarce charred wild rice grains. This is despite the abundant historical documentation of the importance of the rice crop to the local people (Vennum1988). Even on those occasions where refuse bone survives in the archaeological deposits it is hazardous to make one-to-one correlations between the abundance of the various species represented and their actual *relative* importance in the diet. Plant foods rarely survive in archaeological deposits and meat processed for winter consumption was generally divested of its bone. Fish would have been of critical importance but the remains are fragile and difficult to recover even under those rare instances of good preservation. Further, it has been documented that not only were fish frequently filleted to remove the bones but the bones were fed to the dogs (Lister 1988). Traditional methods of capturing fish in nets and weir traps are rarely apparent as direct evidence and artifacts like harpoons and gorges, made of bone and antler, would be dissolved by the normally acid soils. It can be assumed that Northern Algonquians took full advantage of all of the resources in their area and had storage methods which permitted the preservation of foods for winter consumption. Preserved foods would not have involved only dried or smoked fish and mammal meat but also dried berries with their high content of Vitamin C needed to counteract the hazard of scurvy associated with a predominantly meat diet. The more richly endowed southern regions of Northern Algonquian territory permitted a broader range of food options and even included some incipient horticulture along the Lake Huron coastal region and the Ottawa River drainage. As one advanced further north the food options decreased; a fact that is clearly evident in the archaeological evidence for sharp decreases in population densities. For a good summary statement of the nature of the environmental opportunities and limitations of the lands occupied by many Northern Algonquians see Winterhalder (1981). In this study, for example, the relative stability and thereby dependability in terms of availability of various food animals are listed as moose, caribou and beaver (moderate dependability), muskrat, hare, grouse (low dependability), and fish (high dependability).

Site locations are most informative when inferring subsistence in lieu of direct evidence in the forms of bone, shell, and plant materials. Large multi-component Northern Algonquian sites, frequently with thousands of years of human occupation compacted into a deposit of a few centimetres, are generally associated with good fishing locales situated at lake narrows, rapids, and swifts. At such locales women were able to tend fish traps and nets and process the catch and, at the same time, tend to the needs of the children and the infirm while hunters ranged out along the waterways in search of game and other essential products like birch bark, spruce gum, medicinal plants, and suitable stone for tool manufacture. In proximity to the central fish camp it can be assumed that numerous snares and dead-falls would be set in the surrounding forests. Berries and other edible plant materials would also be gathered and processed for a winter food and medicine. Locating special purpose sites, other than sites where stone was being quarried, such as winter caribou pounds, however, still defy the capabilities of most archaeological reconnaissance methods to locate. An intimate knowledge of caribou behaviour relative to natural animal channelling land forms and their relationship to bodies of water would be required in order to attempt to locate such sites. Even if such a search should prove successful there could well be little remaining in the form of direct archaeological evidence. The same problem of archaeological visibility applies to small winter occupations. First, in most instances, a family or two related families would disperse into their hunting territories for the winter. Site location has undoubtedly been exacerbated by the habit of locating a camp on the ice cover of a creek in order to take advantage of the frozen creek and associated rivers and lakes as a convenient highway for toboggan and snowshoe travel during the winter. Of course, such sites were flushed away with the first spring freshet. Indirect evidence, however, can sometimes be used to explain site locations, such as site concentrations being closely associated with wild rice stands (Rajnovich 1984).

Insights into the **Cosmology** of Northern Algonquians can be gleaned from the cliff burials of the Beothuk, the distribution of rock paintings from Québec to Saskatchewan, images engraved on stone pipes, the stone pit and cairn arrangements of Northern Ontario and adjacent Manitoba, the burial mounds of the Ontario-Minnesota boundary area, and the petroforms of southeastern Manitoba. Petroforms, created by arranging cobbles on areas of flat bedrock into a range of zoomorphic, geometric, and abstract forms, appear to be unique to Manitoba but with tentative connections to the Plains while the burial mounds of the Boundary Waters region represent the perpetuation of the Period IV burial mound mortuary tradition of the area. Pits and cairns created by arranging cobbles and boulders, generally on exposed and isolated cobble beaches, are inferred to pertain to the vision seeking quest whereby young adults would fast and dream to acquire a guardian spirit which would then protect them through life. Such structures could also pertain to areas imbued with supernatural power where shamans could solicit special powers from the spirits. Similarly, the rock paintings on vertical cliffs at the waters edge removed from human habitation have been interpreted as places where shamans could solicited spiritual knowledge, especially healing powers, from the spirit people residing in the cliff. In addition to the foregoing features are places endowed with special powers because of some striking physical characteristic such as the cave at La Colline Blanche overlooking the Témiscamie River immediately east of Lac Albanel in central Québec (Hamelin et Dumont 1964). It is of interest that Northern Algonquian culture, with a most rudimentary archaeological material culture, possessed one of the richest array of religious features.



BLACK AND WHITE PLATE LIII: A TENT STRUCTURE. This 13th century Northern Algonquian tent structure at the head of Hamilton Inlet on the Labrador coast is most unusual in that the wooden tent pole frame has survived. Normally only the central hearth floor and associated chipping detritus and calcined bone survive the passage of time. Such portable structures were typical of family dwellings across the breadth of Northern Algonquian territory although larger, multi-family longhouses have also been recorded. (Reproduced from Tuck 1976:Plate 25).

Bands in the northernmost regions appear to have had only limited contacts with outside populations except for related neighbouring people. On the southern margins of Northern Algonquian territory, however, there is abundant evidence of contacts with other people; the St.Lawrence Iroquois, the Ontario Iroquois, the Western Basin culture and/or its derivatives, and various Plains groups. To the east, the southerly Northern Algonquian bands adopted St.Lawrence Iroquois and Ontario Iroquois pottery and pipe styles while retaining their distinctive stone tool assemblage as well as settlement patterns, subsistence, and cosmological practices. Pottery styles pertaining to the Western Basin culture and another pottery style called Penisular Woodland were likely produced by precontact Potawatamis. Reciprocal relationships with Plains groups appear to be less pronounced although there is some evidence in bordering areas of a blending of Plains pottery and Woodland pottery characteristics suggestive of an exchange of ideas. As a rule, however, the Plains groups appear to have largely restricted themselves to the Grassland and Parkland vegetation provinces and the Northern Algonquians to the southern margins of the Boreal Forest. To the north there is little evidence of relationships with Northern Athapascan culture (Taltheilei complex) or Late Palaeo-Eskimo culture (Dorset culture) except in the case of Newfoundland (Renouf et al. 2000).

Social relationships within the Northern Algonquian territory appear to have been pervasively mutual as suggested by the distribution and direct association of different pottery traditions and exchanged lithic materials. Identifying stone artifacts and flakes to specific geological deposits through chemical and petrographic analyses will undoubtedly expand our appreciation of these far-flung relationships. Women would have been the essential bond which held this network of social relationships together through marriages. Marriage formalized rights and obligations between distant bands through those strongest of all bonding ties - blood and kinship. Such a social safety net would not only permit safer travel and trade relations but, most importantly, would act as a form of life insurance in a territory with frequently unpredictable resource availability. Thus, a band facing a winter of starvation due to the failure of the caribou to appear in their usual seasonal haunts could rely on assistance from less unfortunate neighbouring bands. Fictive relationships, formalized in clan systems, would also have accommodated the far reaching relationships reflected in the archaeological record. Indeed, much of the exchange in exotic goods likely pertained to gift exchanges required to cement social and political relationships (McCaffrey 1989).

Relatively little can be said concerning **Human biology** given the paucity of human skeletal materials from an area dominated by acid soils. What materials exist come from the southern margins of Northern Algonquian territory and frequently involve a degree of confusion regarding their ethnic identification.

Inferences on society based upon archaeological evidence is always a speculative procedure. Extrapolating from the corpus of information gathered by 20th century ethnologists and from the late 15th to early19th century documents amassed by missionaries, traders, and explorers is not without its limitations. Early European observers frequently misunderstood the native behaviour they recorded, attempting to fit it into a European cultural framework. We still have the expression "Indian giver", referring to someone who gives a gift but expects a gift in return, which stems from a European misunderstanding of the importance of gift exchange to natives in binding parties to an agreement; a contract if you will which requires of both parties certain commitments and guarantees. Further, it is essential to appreciated that the trained ethnographers of the 20th century did not record pristine cultures. Epidemics of European-introduced diseases, like smallpox, devastated populations leading to the remnants of formally independent populations merging together in a desperate effort to maintain viable communities. These composite populations, in turn, became integrated into a European economic system through the fur trade and were further subjected to missionary activities and the laws of the dominant society. For the formerly mobile groupings of families the seasonal fishing camp sites and multiple band gathering sites, frequently one and the same, became increasingly year-round post communities associated with missionaries, traders, and government people and the imposition of alien social, economic, and religious values. What the archaeological evidence does reflect is the original mobility of the people and their transitory way of life. As noted by the Jesuit Father Jerome Lalemant in AD 1637 with reference to the Nipissings "They seem to have as many abodes as the year has seasons" (JR XXI:239). This despite the fact that the Nipissings at the time were marginal horticulturists.

Even allowing for differing professional analytical inclinations and interests there are still certain limitations in the way archaeological data is used. For example, there are frequent unwarranted assumptions regarding both the preciseness of radiocarbon dates and the nature of the contexts from which the dated samples are recovered which are most often from thin, culturally mixed archaeological deposits subjected to contamination by periodic forest fires and bioturbation. Such radiocarbon dates have been used to demonstrate the contemporaneity of certain archaeological constructs even when the said dates are contradicted by the far more reliable chronological evidence coming from stratified deposits or occupations isolated on different strandlines by isostatic rebound and/or water level fluctuations. There is also an overly optimistic fixation on the utility of pottery styles to delineate regional culture history. This latter inclination is perhaps understandable given the past record of pottery characteristics to establish regional and temporal constructs *under certain circumstances*. Such an approach, however, begins to encounter difficulties in Northern Algonquian culture when a particular pottery complex is provided with a specific ethnic label. For example, western Cree made pottery but eastern Cree did not. Many Algonkins shared in the pottery traditions of their Iroquoian neighbours. More often than not, single component sites produce a mixture of different pottery traditions which raises the problem of what this mixture of Ojibwa, Algonkin, and Potawatami attributed pottery means relative to ethnicity. Pottery traditions do have geographic core areas of development and their spread into adjacent areas is a valuable indicator of social contacts, especially as women traditionally made the pottery and would have been the blood link through marriage between bands. In areas where pottery was not adopted, such as much of northern Québec and Labrador, the distributions of locally exotic stone can perform the same function. Rare instances of pottery in the aforementioned region most likely represent items introduced by women coming into the northern communities from communities to the west and south rather than being evidence of a local pottery tradition. Thus, simply assuming a Blackduck pottery vessel equates with a western Ojibwa woman or a Selkirk pottery vessel equates with a western Cree woman is fraught with a high probability of ethnic misidentification. In addition, there is compelling evidence of blending of Blackduck pottery, supposedly western Ojibwa, and Selkirk pottery, supposedly western Cree, pottery attributes on the same vessel. This phenomenon correlates with the ethnographic and linguistic evidence of a close relationship between the Ojibwa and Cree. In terms of ethnicity the totality of technology and other aspects of culture along with documentary record must be considered but always relative to a cultural kaleidoscope of highly mobile populations within which women were particularly important as the social glue which bonded certain bands into mutually supportive communities. Thus, female technology such as pottery must be applied in a most judicious manner when discussing ethnicity. In contrast to women, men as the hunters needed to know their hunting district intimately and to have ready access to assistance from other males in the community and of the two genders would have been the most sedentary. Women, for example, could carry out their essential tasks without the particular regional constraints placed on male hunters. Archaeological evidence suggestive of female mobility reflects a very old pattern whose survival benefit was obviously pervasive. Even the boundaries between what linguists and ethnologists would call Cree or Ojibwa, for example, are blurred. Some communities when asked what language they speak will say Cree whereas linguists would classify their language as Ojibwa. Others would say they spoke Odawa-Ojibwa when linguistically the language would be classified as Odawa with an abundance of Ojibwa borrow words. Documented multilingualism among speakers of the Algonquian languages (Rhodes and Todd 1981:54) further reflects an exceptional degree of ethnic and linguistic fluidity and interblending of people from different communities. In short, the social interactions reflected however dimly in the archaeological record, as well as the linguistic evidence, indicate that the regional populations composing Northern Algonquian culture cannot be treated, regarding precision of ethic identification as equivalent similar assignments to the Iroquoian tribes making up the Huron or Five Nations confederacies. Tribal societies did not exist among the Northern Algonquians in any sense equivalent to that of Iroquoian societies; only independent nuclear families loosely grouped into regional bands which had varying degrees of intimacy with other bands and families and which could, as circumstances dictated, shift alliances from one band to another. Neither geography nor language nor culture presented significant obstacles to either mobility or intermarriage.

Compensation for the physical limitations of the archaeological record is provided by an extensive body of ethnological and early historical literature. In addition, it is still possible to talk to people regarding the archaeological history of their ancestors and, in the process, acquire valuable insights. The history of archaeology in various areas of Northern Algonquian culture as well as extensive compilations of references are also available (Corbeil 1995; Dawson 1984; 1999; Martijn 1998). While there are many excellent published ethnographic studies one of the most holistic and, in my opinion, still one of the best works is that of Edward S. Rogers on the Round Lake community in Northern Ontario (Rogers 1962).

Some of the limitations facing the archaeologist attempting to outline the pre-European history of the Northern Algonquians have already been commented upon: acid soils; the limited archaeological record left by small highly mobile populations; and base camps representative of thousands of years of occupation where it is impossible to isolate the deposits into discrete components of limited time depth. Much of the archaeological record has also been destroyed by massive hydro-electric project such as Baie James in Québec and the Churchill River Diversion in Manitoba. Most of the major hydro-electric development in Ontario was completed prior to the enactment of legislation which required mitigation of heritage resources including archaeological sites. Some of the most complete archaeological information from the Canadian Shield has been the result of the very hydro-electric processes which flooded entire drainage basins. Archaeological reconnaissance and excavation in the territory of the Northern Algonquians has never been easy. It requires archaeologists who are willing to work in isolation and in areas infested with biting insects and other aggravations. It also requires an ability to operate small water craft on large lake and river systems and to have a feel for working within the constraints of the environment. Until recently such archaeologists were few in number relative to those working in more kindly climes like the Plains or exotic regions like the Arctic. Personally, the grandeur and, until recently, unspoiled nature of the country, has been more than compensation for any perceived hardships which more often than not are self-imposed by ignorance of how to live on the land. Inexperienced individuals are recommended to seek the services of a local native guide and to learn from him not only how to travel in the bush but of local oral traditions and numerous other aspects of knowledge involving the territory.

Cultural origins and descendants:

In the preceding volumes it was the practice in this section of a chapter to provide information on radiocarbon dates. This procedure is no longer necessary as Canadian radiocarbon dates are listed on the Internet at www.candianarchaeology.com and http:wwwims1.gsc.nrcan.gc.ca/projects/mabasyquad/radiocarbon/c14intro.htm. The first reference pertains to the Canadian Archaeological Radiocarbon Database and the latter to Mapping Ancient History where dates are presented relative to Quaternary and archaeological data on maps associated with specific time periods and changing land forms through time. The reader can acquire complete information on dates from either personal Internet access or through institutions such a libraries. As with previous volumes, Volume III radiocarbon dates are calibrated for fluctuations in atmospheric C#14 following Klein et al. (1982) in order to provide calendar years which are then presented as either AD dates, years ago, or by century such as late 15th to early 16th centuries. There are more fine-grained calendrical calibrations of radiocarbon dates available but the Klein et al. calibrations are sufficiently broad to accommodate the inherent limitations of archaeological contexts and the ever-present possibility of sample contamination. Both of the latter factors are particularly serious with regard to Northern Algonquian radiocarbon samples, given both the shallowness of archaeological deposits from predominantly multi-component sites and their occurrences in an area characterized by endemic forest fires and humic acid contamination.

All the regional expressions of Northern Algonquian communities have Period IV ancestors and in every instance application of the Direct Historical Approach has connected sites with European trade goods to related sites lacking European goods; the latter representing pre-contact occupations. In the majority of instances these cultural developments took place within the territories of the pre-AD 500 ancestors. There are exceptions, however, which in the main pertain to the eastern and western extremities of Northern Algonquian territory. The following considerations bearing on the origins and descendants proceed from east to west.

The Dorset complex of Late Palaeo-Eskimo culture disappeared from the Island of Newfoundland between AD 500-800 (Renouf 1999a:416; Tuck 1982:214-215), likely due to an ameliorating climate which did not favour their way of life. Another interpretation holds that, given the Island of Newfoundland's lack of "fall-back" resource alternatives when faced with the unavailability of a critical food animal like harp seal or caribou, extinction may have been the fate of the Dorset people (Tuck and Pastore 1985). Conquest and possibly disease can be ruled out regarding the demise of the Dorset and, therefore, natural environmental stress is believed to be the most likely explanation for their disappearance. Something as simple as a prevailing offshore wind keeping the harp seal herds and seal pups on the pack ice out of reach of the hunters on land could spell disaster. Even for a short time such an event(s) would deny people both immediate sustenance and the storage food required to carry them through to when potential alternative foods like salmon or caribou would become available. As Late Palaeo-Eskimos occupied the coastal regions of the Island it was also reasonable to assume that the ancestors of the Beothuk could not have occupied the same coasts until after the former occupants had disappeared. Subsequent work at Port au Choix on the western coast, however, has not only demonstrated the contemporaneity of the Dorset people and the ancestors of the Beothuk but has provided settlement pattern evidence and a battery of radiocarbon dates to support the proposal that the two populations were not only contemporary but lived in close proximity to one another for at least part of the year and probably had established a mutually beneficial assistance relationship based on their differing resource emphases; harp seal for the Dorset and caribou for the Beothuk (Renouf et al. 2000). Even allowing for the limitation of radiocarbon dates when it comes to precise chronologies it would appear that the ancestors of the Beothuk were on the Island of Newfoundland at least by the end of Period IV at approximately 2,000 years ago. Northern people, such as the Dorset and the Beothuk, would have had fall back strategies for dealing with periodic resource failures, one of which would be to abandon an area; not an impossible alternative for people with exceptional maritime capabilities. In this most likely scenario the Newfoundland Dorset may have simply retreated northward to southern Labrador rather than starve to death on the Island of Newfoundland. The suggestion that the ancestors of the Beothuks crossed from Labrador to the Island of Newfoundland via the Strait of Belle Isle sometime prior to Period V is supported by archaeological and ethnographical evidence as well as the limited linguistic information. An alternative hypothesis holds that the Beothuk developed in place on the Island out of the preceding Late Maritime culture (Maritime Archaic) (Carignan 1977; Tuck 1976:68-69) but substantive evidence for cultural continuity from Late Maritime culture, which disappeared from the Island sometime after 1,500 BC, has not been produced. Additional support of the Port au Choix evidence of Late Palaeo-Eskimo and proto-Beothuk contemporaneity has been provided by AD 700 dates from the Dorset soapstone quarries at Fleur de Lys on the Baie Verte Peninsula of Newfoundland (Callum 1986:200) and the Direct Historical Approach evidence suggestive of a Beothuk presence on parts of the Island around AD 500 (Pastore 1986:218) which would have been prior to the total abandonment of the Island by the Dorset people. There is little doubt that the Point Revenge complex of Labrador (proto-Montagnais-Nascapi) and the Little Passage complex of Newfoundland (proto-Beothuk) are but two phases of a common cultural development (Loring 1985:133; Martijn 1990:228; Pastore 1986:223; 1987:59). In Labrador there is also evidence of cultural continuity from approximately AD 200 to the time of European contact (Loring 1985:134; 1989:62-63) which terminated in the Montagnais-Nascapi. Indeed, it has been suggested that the aforementioned Labrador development even extended back into Middle Shield culture of 2,000 BC (Wright 1995:263). Whatever their qualifications, the majority of anthropologists would agree that the Beothuk were Algonquian of some sort (Carignan 1975; Hewson 1968; Jenness 1929). In fact, a close relationship between the Beothuk of Newfoundland and the Montagnais-Nascapi of Labrador and Québec has long been recognized by archaeologists (Fitzhugh 1972:135; Tuck 1971:29-30).

Just as cultural continuity from Period IV to the European contact period for people who would become known as the Montagnais-Nascapi was noted for Labrador

(Loring1989), the same relationship can be extended to Mingan on the north shore of the Gulf of St.Lawrence in Québec (Fitzhugh 1972:127; Lévesque 1971) and into the Saguenay-Lac St.Jean area where a local Montagnais development has been attributed to a Period III Middle Shield culture (late Shield Archaic) ancestry (Chapdelaine 1984a:Tableau 30, Chapitre IV). Regional archaeological cultural continuity of the various Algonquian-speaking peoples identified in the written records is the rule: the Abitibi-Temiscaming area of western Québec and adjacent Ontario (Côté 1993a:Tableau 1; Marois et Gauthier 1989); Caniapiscau in north-central Québec (Denton 1989); northwestern Ontario (Dawson 1976a:Appendix C; Koezur and Wright 1976); in the Churchill River drainage of northern Manitoba and Saskatchewan (Meyer and Smailes 1975:43); and in other areas with Northern Algonquian occupations.

The migration of the ancestors of the Beothuk onto the Island of Newfoundland from Labrador around 2,000 years ago did not represent the only Northern Algonquian territorial expansion. The western-most Cree appear to be a product a late 15th century westward thrust which reached as far as the eastern edge of northern Alberta (Meyer 1983). These people originated from northern Manitoba and possibly northeastern Saskatchewan. A suggestion, however, that the Selkirk complex attributed to the western Cree developed out of the preceding Blackduck complex and Late Western Shield culture (Laurel) (Meyer and Russell 1987) is based upon radiocarbon dates. This is a questionable assumption given the contrary evidence from stratigraphy as well as the technological evidence of the Blackduck complex developing out of Late Western Shield culture (Laurel). Unlike the situation with the Blackduck pottery Selkirk pottery appears to bear no relationship to earlier pottery traditions and is best viewed as a product of stimulus diffusion which resulted in a unique pottery tradition despite suggestions to the contrary (Rajnovich 1983). Despite differences in the pottery traditions of the Blackduck and Selkirk complexes there is continuity in the remainder of the technology, settlement and subsistence practices, and certain cosmological phenomenon like rock paintings.

There are problems with the chronological sequence of occupation inferred from different pottery styles, particularly with reference to Manitoba and adjacent western Ontario. In southeastern Manitoba the Blackduck complex appears to have developed out of the preceding Late Western Shield culture (Laurel) occupation (Steinbring 1980:105) as it did in Ontario but was subsequently replaced by the Selkirk complex which continued into the European contact period (MacNeish 1958:46-47). Stratigraphic evidence from sites like Lockport on the Red River support the proposition that Blackduck pottery was replaced by Selkirk pottery (MacNeish 1958:23); the former now equated with the western Ojibwa bands and the latter with the Cree. Unlike the situation in southern Manitoba Ontario Blackduck pottery has been associated with

European materials (Dawson 1976b; Wright 1967). Often, in both Manitoba and Ontario, the two pottery traditions are found in direct association with one another reflecting the documented close relationship between the western Ojibwa and Cree.

The use of pottery traditions to identify specific ethnic groups is a convenient albeit risky interpretational device; especially when dealing with closely related groups like the Ojibwa and the Cree who are known to have frequently intermarried. The problem is highlighted by the fact that Algonquin and the western Montagnais people further east shared common pottery traditions with their culturally and linguistically unrelated Ontario and St.Lawrence Iroquoian neighbours. Some of these same Algonquian people can also be demonstrated to pertain to eastern Ojibwa and Odawa bands. Thus the speculation that the Selkirk complex (e.g. pottery) evolved out of the Blackduck complex (e.g. pottery) which, in turn, arose from Late Western Shield culture (Laurel) and, in the first two instances, gave rise, respectively, to the people now known as the Cree and the Ojibwa (Meyer and Russell 1987; Rajnovich 1983) is fraught with a number of problems. For example, despite the demonstrable contemporaneity of the Blackduck and Selkirk complexes in most regions there is only limited evidence of a technological link between Blackduck and Selkirk pottery. While there is little question that the Blackduck complex arose from the preceding Late Western Shield culture (Laurel), as demonstrated by transitional technological changes in both the pottery and the stone tool assemblages and the stratigraphic and isostatic rebound contextual evidence (Dawson 1981:54; Koezur and Wright 1976) there is little to suggest Selkirk pottery was similarly derived. Stimulus diffusion, whereby an introduced idea such as pottery is accepted but is translated into a form bearing little relationship to the original donor product is still the most parsimonious explanation for the unique nature of Selkirk pottery. Local innovation is clearly evident on the Churchill River of northern Manitoba where pottery plates, cups, and bowls are unique to the local Selkirk pottery industry. Despite differences in the pottery traditions here is little question, given the remainder of the technology, settlement patterns, subsistence practices, and cosmological phenomenon like rock art, that the Blackduck and Selkirk complexes are closely related. This relationship is also to be seen in the frequent direct association between the two complexes at sites as determined by pottery styles. What this means in ethnic terms is a difficult question to answer. For example, when does a mixture of pottery traditions indicate either Ojibwa or Cree or both? Or, in many instances, are we safer to use the term "Ojibwa-Cree" or some other broader ethnic marker? The problem is well expressed at the stratified Long Sault site on the Rainy River in southwestern Northern Ontario where, although the Selkirk occupation follows the Blackduck occupation, coil constructed vessels with Laurel decorations were impressed with a textile (Arthurs 1986:175) and in this regard exhibited transitional Laurel to Selkirk pottery attributes also noted in Manitoba and other parts of Ontario. Perhaps Selkirk pottery is a product of both stimulus diffusion and a distinctive pottery transition derived from the preceding Late Western Shield (Laurel) pottery tradition. In summary, the entire business of equating, in any absolute sense, ethnicity with pottery styles is in need of much serious reconsideration. Pottery styles cannot be simplistically correlated with specific ethnic groups without corroborating evidence being drawn from all other possible sources and, even then, we are undoubtedly dealing with ethnic abstractions that, while useful to anthropologists, likely had little reality for the people to which the labels are being attached.

Much of the difficulty encountered in attempting to evaluate the cultural origins, if not descendants, of Northern Algonquian peoples has been an unjustified faith in the capability of radiocarbon dates to establish a precise chronology. Radiocarbon dates have been used as evidence that Late Western Shield culture (Laurel) was contemporary with the Blackduck complex (Dawson 1981:38; Syms 1977:106) between AD 900-1200. This despite the fact that stratified site after stratified site, as well as sites isolated by time gradient elevated beaches along the Upper Great Lakes, consistently point to a lineal and sequential development rather than a contemporary one. While the risks posed by contaminated or contextually questionable charcoal samples for radiocarbon dates are clearly recognized (Meyer and Russell 1987) the influence of the dates on chronological considerations still appears to be pervasive. There is a need to critically weigh the relative validity of chronological methods. In this respect, when it comes to a fine-grained chronology I will place my faith in stratigraphy, isostatic rebound isolation of time units, and seriation of total technologies over the contextual and contamination problems inherent to radiocarbon dating. This is not to denigrate the importance of the radiocarbon method but rather to evaluate it relative to other chronological methods when a fine-grained chronology is being sought.

Technology:

Exclusive of the regional pottery traditions, which occur mainly from western Québec across the Canadian Shield as far as the eastern margins of Alberta, the remainder of the technology consists predominantly of chipped stone implements. Some ground stone implements and minimally modified stone tools, like hammerstones and netsinkers, are also present. Native copper implements are naturally most common in the Lake Superior region where native copper deposits were available as well as a long tradition of working with the metal. Bone and antler tools are limited to those situations where acid soils have been neutralized. The only significant regional variation in the stone tool industry occurs among the easternmost Northern Algonquian maritime adapted bands and along the southern fringes of Northern Algonquian territory where influences from southern-derived technologies are evident.

Characteristic of the eastern technological variant encountered on the sites in Newfoundland, Labrador, and along the north shore of the Gulf of St.Lawrence are trianguloid arrowheads with very deep and narrow corner-notches. Side-notched and triangular forms are present as are a limited number stemmed arrowheads. All but the first point form is shared with Northern Algonquians elsewhere including the distinctive trait of arrowheads retaining evidence of being produced from flakes with original flake curvatures, minimally flaked surfaces and unifacial crossections being common. On the Island of Newfoundland and elsewhere some of the large triangular chipped points were possibly used to arm bone and antler harpoon heads. Also common are a range of scraper forms including large side scrapers and, along the east coast of Newfoundland in particular, linear flakes which would have functioned as expedient knives (Austin 1984). Triangular bifacially chipped knives are also common. At the 6th century Cape Freels 2 site on the east coast of Newfoundland large, triangular chipped points were most common with other tools consisting of side-notched and corner-notched arrowheads, end scrapers, large flake scrapers, linear flakes, hammerstones and a single abrader (Carignan 1976). At the other end of the time spectrum, late pre-contact sites from the interior on Red Indian Lake produced small corner-notched and stemmed points or knives, bifacial triangular and flake knives, end scrapers, cobble choppers and hammerstones not unlike those from the coast (Carignan 1975:12). The use of iron pyrites in strike-a-light fire making kits has also been noted (Jenness 1929:36-37). In some regional sequences arrowheads change through time from corner-notched forms to stemmed ones and become smaller (Pastore 1984:107). Late Beothuk arrowheads, predominantly small, unifacial forms with basal notches, rapidly decline in use with the adoption of European iron (McLean 1994). While there are regional variations the point form changes appear to parallel those of the Labrador coast going from side-notched to narrow and deep corner-notching to notched flake points. While some of the Newfoundland sites have produced Ramah quartzite from the northern Labrador coast, indicative of far ranging contacts, local high quality cherts, such as along the west coast of the Island, were more readily available (Nagle 1985).

Despite evidence of a brief period of contemporaneity on the Island of Newfoundland evidence of technological sharing between the proto-Beothuk and the Late Palaeo-Eskimo Dorset is not readily apparent. It has been suggested, however, that certain Beothuk concave, unifacial stemmed scrapers resemble Dorset tools (Simson 1984:Plates 1 & 2). Cultural alterations to tool forms as a result of stimulus diffusion may well make archaeological identification of transfers between cultures difficult or impossible to recognize.

On the Labrador coast at the 9th century Tikkoatokak site near Nain corner-notched arrowheads, large triangular knives and utilized flakes were common (Loring 1989).

Most tools were manufactured from Ramah quartzite acquired from 300 km to the north although Cape Mugford chert, half the distance to the north, was also present as well as a single flake attributed to a source on the western coast of Newfoundland. To the south of Nain at the Kamarsuk site, in addition to the usual chipped stone tool assemblage characteristic of a complex called Point Revenge, was a polished stone fragment from a possible celt and some plain, grit tempered pot sherds (Loring 1985:128). The Winter Cove 4 site at the entrance to Hamilton Inlet on the central Labrador coast was a major late 15th century occupation (Fitzhugh 1978) which produced two ground stone celts in addition to the usual chipped stone tool assemblage. One of the most informative eastern Northern Algonquian sites is the Poste de Jolliet site near Mingan on the Île du Havre off the north shore of the Gulf of St.Lawrence (Lévesque 1971). The Direct Historical Approach can attribute this stratified site to a local Montagnais cultural development which possessed a Point Revenge chipped stone tool assemblage but in association with pottery. Pertinent regarding the consistency of external influences is the fact that the pottery style changes through time at the Poste de Jolliet site mirror pottery stylistic trends much further upriver from whence the pottery styles were originally acquired. The archaeological deposits at this exceptional site represent approximately 700 years of local Montagnais history terminating with the late 17th century French trading post of Louis Jolliet. Little technological change was noted throughout these seven centuries, a characteristic also typical of the Labrador coast (Fitzhugh 1978). Arrowheads were mainly corner-notched and side-notched forms but triangular and stemmed points were also represented. Minimal retouch, so typical of all Northern Algonquian arrowheads, was common. Scrapers consisted mainly of small end scrapers although random flake scrapers were also abundant. Biface knives were of ovate and triangular forms with some of the latter possibly being the end blade tips for harpoons (Lévesque 1971:128, 1 & 2). Four polished stone axes and two abraders complete the assemblage of *excavated* items recovered in good archaeological contexts. The pottery mainly represented Owascoid styles typical of sites upriver as far as Lake Ontario and into New York and adjacent states. The uppermost level or latest pottery, however, differed in being either plain or incised and very crudely modelled (Table 29) suggesting pottery vessels in the late stratum were in the process of being replaced by European metal kettles and that pottery manufacturing skills were no longer regarded as being necessary.

Despite component mixture and some debate regarding Algonquian or Iroquoian authorship the Chicoutimi site on the Saguenay River draining Lac St.Jean into the St.Lawrence River provides a rare glimpse of Montagnais bone technology (Chapdelaine 1984a:15). Specimens consist of fleshers, points or awls including ivory specimens, gaming pieces, worked canines, and ice picks (?) associated with a stone tool assemblage dominated by small end scrapers. Fleshers are a bone tool made from the canon bone of a deer, moose, or caribou which were used in hide preparation. Ivory items should not be surprising as walrus (*Odobenus rosmarus)* were once present around the mouth of the Saugenay River (Banfield 1974:364). The bone gaming pieces, including two highly ornamented ones (Ibid: Planche 38), are particularly interesting as they are quite similar to the gaming pieces used by a number of different tribes across much of eastern North America including the Atlantic seaboard. Corner-notched, triangular, and side-notched arrowheads, most minimally retouched, were recovered along with wedges, biface knives, large side scrapers, polished stone axes and adzes, and some shell cylindrical and disc beads. Pottery, as at the nearby Metabechoaun site, consisted of a mix of contemporary St.Lawrence Iroquois and Ontario Iroquois styles. The bone industry at the Metabetchouan site on Lac St.Jean consisted mainly of beaver incisor tools but awls were also recovered from the stratified deposits of this 16th to 17th century site (Simard 1970). With reference to the bone tool industry, however, acid soils have generally done their work well as suggested by the limited archaeological recoveries relative to the observation that "A glance at the material culture of the Labrador bands discloses the employment of caribou bone and antler as the materials of manufacture of every conceivable tool: beamers, scrapers, fleshers, drills..." etc. (Speck 1935:89).

In general, post AD 1000 sites along the north shore of the Gulf of St.Lawrence from Tadoussac east produce mainly corner-notched and some stemmed arrowheads with triangular points being rare (Plourde 1995) and, as such, exhibit a closer relationship to eastern and northern point styles (Pintal 1995). To the north in the Caniapiscau area in the highlands of Québec an abundance of Ramah quartzite at some sites points to contacts with the northern Labrador coast. The small corner-notched, minimally retouched and side-notched arrowheads, triangular biface knives, small end scrapers, and numerous retouched flakes (Denton 1981:298-300) relate to the Point Revenge complex initially identified in Labrador. A variant on this theme, however, suggests that for other sites in the same area contacts were more to the west with chert being more common than Ramah quartzite. In this instance arrowheads are predominantly side-notched and associated with numerous utilized flakes and end scrapers. It has been speculated that the first tool kit variant pertains to the Montagnais and the second to the Cree (Ibid:305); a possibility enhanced by the fact that Lac Caniapiscau, now a major hydro electric reservoir, had drainage connections to all points of the compass. Technological variability in the region has been attributed to people moving in and out from both the east or the west rather than being the product of exceptional mobility by one group across the entire Québec/Labrador Peninsula. The majority of the contacts suggested by exotic stones, however, were to the east (Denton 1989).

As in all cases with stone age technologies the expedient flake used for a wide range of cutting, scraping, and perforating tasks dominates the tool kit. Anyone who has experimented with flaking stone has been left a bloody reminder of just how sharp freshly struck flakes can be. In addition to the triangular biface knives, arrowheads, and the relatively common end scrapers, pièces esquillées or wedges and red ochre nodules have been reported (Nolin 1989). Indeed, red ochre is common on sites across the Canadian Shield from earliest times onward, generally in nodular form. While ochre has been considered as a drying agent associated with hide preparation (Nolin 1989:88) it was also likely used as a paint pigment for clothing and other objects. Pièces esquillées or wedges are multi-purpose graving, slotting, and scraping stones tools which, in terms of manufacturing procedures, fall in between the simple expedient flake and the carefully finished chipped stone tool. Artifact recoveries from the northern regions, in general, tend to be sparse. From a contact period longhouse at the GaEj-1m site in north central Québec, for example, in addition to the European trade items there were six small side-notched and corner-notched arrowheads, a corner-notched bifacial knife, utilized and retouched flakes, and two plain pottery body sherds (Denton 1982).

Perishable materials from Northern Algonquian sites are understandably rare. A 4.6 by 0.7 m sheet of rolled-out bark weighted down with stones was discovered at the Cape Cove Beach site on the Newfoundland coast (Austin 1984). Such a sheet would likely have been used as part of the exterior sheathing of a dwelling or possibly for a canoe covering. Ethnographic information leaves no doubt that bark, wood, sinew and hides composed the vast bulk of Northern Algonquian technology. A rare glimpse of the range of such objects was revealed in the grave of a young Beothuk boy discovered in Notre Dame Bay on the east coast of the Island of Newfoundland in1886 (Howley 1915:330-332). The naturally mummified body, fully clothed in skins including fringed moccasins, was wrapped in an ochre painted skin shroud and accompanied by numerous grave offerings including a so-called wooden doll that was more likely an ancestor figure, extra pairs of moccasins sewn together with sinew, bone ornaments and birds feet sewn onto the outer robe, two birch bark model canoes, miniature bows and arrows and paddles; packages of red ochre, and dried fish in a bark package placed in a basket. The grave had been covered with tree limbs supporting a large, sewn birch bark covering which was then covered with a layer of gravel and stone. A short distance away the skull and long bones of an adult were encountered associated with a stone spear and arrowheads, a stone dish, birch bark drinking vessels, and a European iron axe and knife, all covered with red ochre. With reference to the child's grave, across most of Northern Algonquian territory the only surviving archaeological evidence would have been the red ochre stain and probably some evidence of the grave pit outline.

Unlike Iroquoian sites where pottery styles have been used to establish chronologies and regional developments relevant to different tribal groups the appearance of pottery on Northern Algonquian sites serves a somewhat different function. First, pottery is never an abundant element within the total archaeological assemblage unlike its frequent 90% representation on Iroquoian sites. Both the adoption and elaboration of pottery in Northern Algonquian culture becomes increasingly common as one shifts southward and westward. Northern Algonquian sites containing any significant amount of pottery generally have more than one pottery tradition represented; a circumstance reflecting female mobility whereby women bring their pottery manufacturing skills from their birth places to the territories of their husbands. On Lac St.Jean in Québec, for example, a total of 70 pottery vessels from 33 sites dating to Period V consisted of equal representations of Ontario Iroquois pottery (Huron) and St.Lawrence Iroquois pottery. Further, the late 15th and mainly 16th century pottery styles would suggest that the two pottery traditions were contemporary in the area and not sequential (Moreau et al. 1991:51; Table 3). Ontario Iroquois pottery pipes were also present indicating Algonquian male participation in ceremonial smoking. While the St.Lawrence Iroquois pottery influences could have moved down river to Lac St.Jean, the Ontario Iroquois influences would have had to cross through the lakes and rivers of the northern hinterland to reach the Lake. A curious circumstance is the fact that the Lac St.Jean vessels with collars more than 30 mm high are more common than on either St.Lawrence Iroquois or Ontario Iroquois village sites proper (Ibid:57). It has been speculated that such high collared vessels represent evidence of feasting and alliance formation (Finlayson 1998) and such a possibility could well apply to the Lac St.Jean region where people from a number of regions met and presumably established or reaffirmed alliances.

In southwestern Québec Period V sites produce increasing numbers of pottery vessels as well as a stone tool assemblage differing somewhat from that further east. The deeply corner-notched arrowheads largely disappear as do the large triangular points inferred to represent the arming tips of harpoons. Such changes appear to represent a break between eastern and western facies of the stone tool technology. On the headwaters of the Rivière Saint-Maurice, from whence rivers like the Gatineau could be reached, the pottery predominantly relates to the Ontario Iroquois although at least one Martime Algonquian pottery vessel has been found (Ribes et Klimov 1974: Pl.XLI). In Level 1 of the DaGt-1 site near the Ontario border of Québec ten pottery vessels with average capacities of 12.6 litres (Côté 1993:Tableau 5) were all produced in15th to16th century Ontario Iroquois styles. Interestingly, neutron activation analysis of these same pots suggest that the vessels were not manufactured from local clays but must have been brought into the area (Côté 1993a:20). Ten Ontario Iroquois pipe forms were also recovered. A high incidence of fissile pottery paste was noted (Ibid:46) whereby interior and/or exterior surfaces slough-off, a trait characteristic of Algonquian pottery as opposed to Iroquoian pottery (Wright 1981). Apparently less attention, skill, and/or inclination was paid to paste preparation and proper drying and firing by Algonquian women than by of their Iroquoian neighbours. As can be seen from Table 28 this multi-component

BLACK AND WHITE PLATE LIV: NORMALLY PERISHABLE OBJECTS FOUND IN A BEOTHUK BURIAL PLACE IN 1886 The wooden human figure, a birchbark drinking cup, and fringed skin moccasin provide a glimpse of the range of Beothuk manufactured objects that rarely survive in the archaeological record (Composite reproduced from Tuck 1976: Figs.17-19. Scale variable)

Algonkin site in extreme western Québec has a significantly greater variety of artifact classes than its eastern Montagnais contemporary at Mingan. There were also fewer arrowheads but, in general, the tool kits are not that dramatically different considering the nature of the respective collections and the fact that the sites are separated by over 1200 km.

Site	Jolliet		DaGt-1	
Artifact Class	**f**	**%**	**f**	**%**
Arrowheads	66	28.1	14	8.0
End scrapers	84	35.7	68	39.1
Random flake scrapers	24	10.2	10	5.7
Bifacial knives	25	10.6	8	4.6
Polished stone axes	4	1.7	1	0.6
Abraders	2	0.9	6	3.4
Pottery vessels (approximation)	30	12.8	10	5.7
Pottery pipes	-	-	10	5.7
Side scrapers	-	-	8	4.6
Wedges	-	-	10	5.7
Soapstone cones	-	-	5	2.9
Hammerstones	-	-	6	3.4
Graphite nodules	-	-	2	1.1
Native copper knife	-	-	1	0.6
Drill	-	-	1	0.6
Beaver incisor tools	-	-	7	4.0
Bone awls	-	-	5	2.9
Bone bead	-	-	1	0.6
Bone worked phalange	-	-	1	0.6
Totals	**235**	**100.0**	**174**	**99.8**

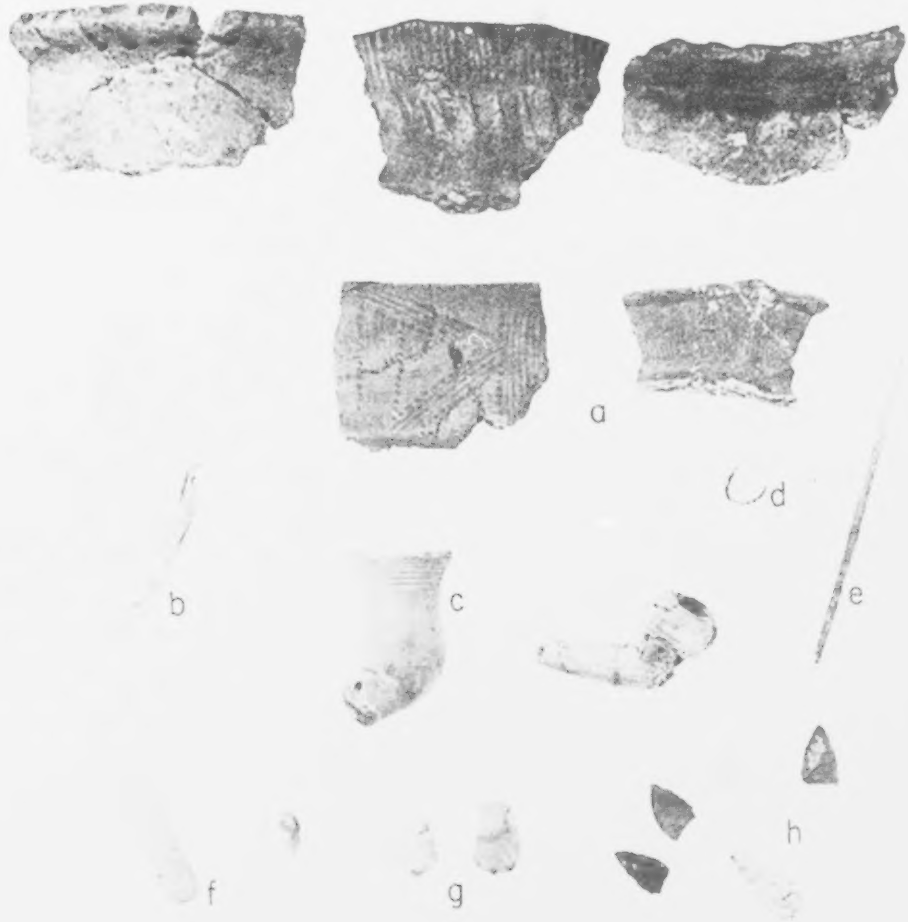
TABLE 28: ARTIFACT CLASS FREQUENCIES FROM THE POSTE DE JOLLIET SITE ON THE NORTH SHORE OF THE GULF OF ST.LAWRENCE AND THE DaGt-1 SITE ON THE OTTAWA RIVER DRAINAGE NEAR THE ONTARIO BORDER The above frequencies collectively represent approximately seven centuries of contemporary Montagnais and Algonkin culture history. The DaGt-1, Level 1 deposit contained slightly less time depth than the Poste de Jolliet site. Bone preservation was poor to nil at both sites.

Understandably the site now occupied by the Canadian Museum of Civilization in Hull, now Gatineau, Québec, at the foot of the Chaudelière Rapids once was occupied by a major archaeological site which produced "Huron-like" pottery (Sowter 1909:71). The site was destroyed in order to provide sand for mortar during the construction of the East and West blocks of the Parliament Buildings directly across the Ottawa River.

Sites at the mouth of the Michipicoten River on the northeast coast of Lake Superior are characterized by an exceptionally diverse mixture of different pottery traditions. At the stratified Michipicoten site on the south bank, which was occupied from the 12th century until European contact, the major occupations pertained to the late 15th century into the 17th century (Wright 1968). Pottery traditions represented were Ontario Iroquois, including pipes, Peninsular Woodland, another variety of vessels related to the pottery tradition of the Western Basin culture, and a distinctive stamped pottery which may be a local product stimulated by Ontario Iroquois pottery ideas. Exclusive of the stamped pottery, these pottery traditions reflect relationships to the east and to the southeast. Paradoxically, across the River at the contemporary Nyman site, Blackduck complex pottery, absent from the Michipicoten site, represents the major pottery tradition (Dawson 1976b) although Peninsular Woodland and Western Basin related pottery traditions are also represented. The Ontario Iroquois and Stamped pottery, so common on the opposite side of the River, were represented by only five of the seventy vessels (Ibid:Table 3). Also present at the Nyman site but absent from the Michipicoten site were two Selkirk complex vessels. Blackduck and Selkirk pottery are both indicative of western contacts. The anomaly presented by the differing pottery traditions represented at these two adjacent and contemporary sites will be given further consideration in the section on **Inferences on society**. Sample size does not appear to have been a factor in this discontinuity in pottery traditions within a markedly restricted geographical area and it is inferred that the Michipicoten River may have acted as some kind of an east-west boundary marker between some, but not all, Northern Algonquian bands. The differing pottery traditions present on either side of the Michipicoten River do mirror a similar east-west division of pottery tradition composition apparent at a site like Whitefish Island at the juncture of the three upper Great Lakes (Conway 1977) 150 km to the south when compared to a site like the Pic River site (Wright 1967) on the north shore of Lake Superior 125 km to the northwest.

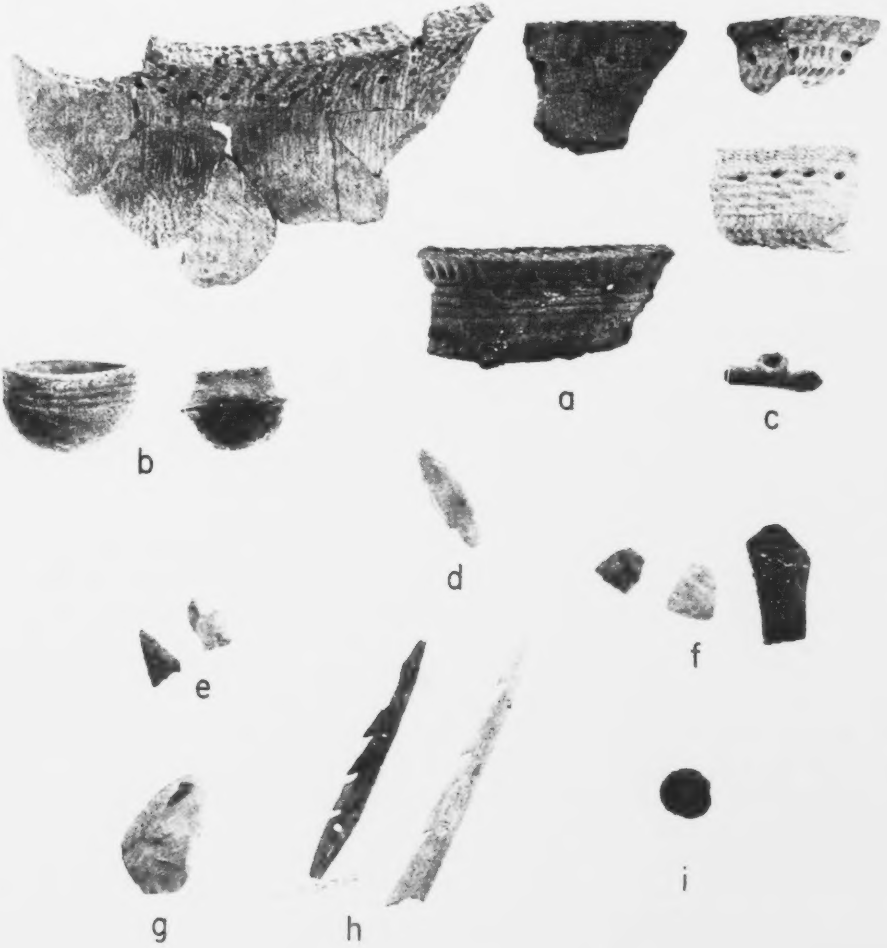
To the west of the Michipicoten site two pottery traditions dominate Northern Algonquian sites; Blackduck, which extends westward into Manitoba, Minnesota and eastern Saskatchewan, and Selkirk, found mainly to the north in northwestern Ontario and northern Manitoba, Saskatchewan, and northeastern Alberta. In southern Manitoba and adjacent Ontario Blackduck pottery appears to have preceded the appearance of Selkirk pottery but throughout most of Ontario the two pottery traditions are usually found together in varying frequencies. Blackduck pottery has been attributed to the western Ojibwa and Selkirk pottery to the western Cree where "A close, almost indistinguishable, relation appears to exist between the northern Ojibwa and various groups of Cree" (Dawson 1976:28). As an example of this "indistinguishable relation" the McCluskey site west of Thunder Bay (Dawson 1974) can be compared to the Potato Island site nearly 400 km to the north (Koezur and Wright 1976). Of the various pottery traditions represented at these two sites the Blackduck pottery tradition is dominate at 87% and 43% for McCluskey and Potato Island, respectively, with the equivalent figures for Selkirk pottery being 8% and 32% (Ibid:Table 2). The McCluskey site also produced Peninsular Woodland, Western Basin, Ontario Iroquois, and Stamped pottery; all absent from Potato Island which, in contrast, produced a single vessel of Sandy Lake pottery associated with the Siouan-speaking Assiniboine (Cooper and Johnson 1964). A number of vessels were transitional from Late Western Shield culture (Laurel) into Blackduck. Pottery vessels with attributes transitional from the preceding Late Western Shield culture were also present at the McCluskey site. In contrast to the preceding pottery variability the stone tool assemblages from both sites were quite similar (Koezur and Wright 1976:Table 4). For example, at both sites arrowheads and scrapers accounted for more than 70% of the total assemblages. A similar mixture of pottery traditions found at the McCluskey site has also been reported from Lake Nipigon (Dawson 1976:19). Further, sites in all three regions have produced evidence of a pottery transition from Late Western Shield (Laurel) into Blackduck suggesting that the incursion of Selkirk pottery into Ontario and southern Manitoba was subsequent to the evolution of the Blackduck pottery tradition.

The relationship between the Blackduck and Selkirk pottery traditions in southeastern Manitoba and adjacent Ontario is complex and compounded by the difficulty of isolating components at sites which have often been occupied seasonally for thousands of years. Too often, even though Blackduck and Selkirk pottery can be clearly identified on stylistic grounds, the contextual relationship between the two is unclear given the nature of the archaeological deposits. Under such questionable circumstances the chronological sequence of Blackduck followed by Selkirk is simply taken as given. Such was the case at the Spruce Point site on Lake of the Woods where two inferred dwellings are treated as separate components (Rajnovich 1983). Pottery at the site is regarded as predominantly Selkirk, as reflected in the dominance of fabric impressed sherds, a Selkirk trait, over cord-malleated sherds, a Blackduck trait. As with other Northern Algonquian sites arrowheads and scrapers dominated the stone tool kit. Similarly, in southeastern Manitoba where Selkirk pottery is believed to follow Blackduck pottery, the remainder of the assemblages associated with the two pottery traditions are quite similar (Buchner 1979), being dominated by side-notched and triangular arrowheads and scrapers but also with a significant frequency of biface knives which appears to be a distinctively local characteristic of the area.



BLACK AND WHITE PLATE LV: NORTHERN ALGONQUIAN ARTIFACTS TYPICAL OF WESTERN QUÉBEC AND EASTERN ONTARIO The majority of the illustrated items come from the 16th and 17th century strata of the Michipicoten site on the northeast shore of Lake Superior (Wright 1968). The rim fragments (a) of the two pottery vessels in the centre are Ontario Iroquois pottery styles while the flanking rim sherds pertain to a pottery tradition known as Peninsular Woodland. Peninsular Woodland pottery, typical of sites at the juncture of the Upper Great Lakes, has been attributed to the Potawatomi, a group of Algonquian-speakers related to the Ojibwa and Odawa or Ottawa with whom they were closely associated at the contact period and often lived together in the same villages. Ontario Iroquois style pottery has been found throughout the Canadian Shield from Lac St.Jean in Québec to Lake Nipigon in Ontario and north to the James Bay drainage basin (Côté:1993:Fig.27), most often in direct association with other unrelated pottery traditions. The crudely flaked slate artifact (b) would have functioned as a specialized scraper. Both clay smoking pipes (c) are in the style of the Ontario Iroquois. The native copper items (d) are represented by a finger ring and a large awl. Other items are a simple stone chisel (f), side and end scrapers (g), and triangular and side-notched arrowheads. (Reproduced from Wright 1972b:Plate 24. Scale variable)

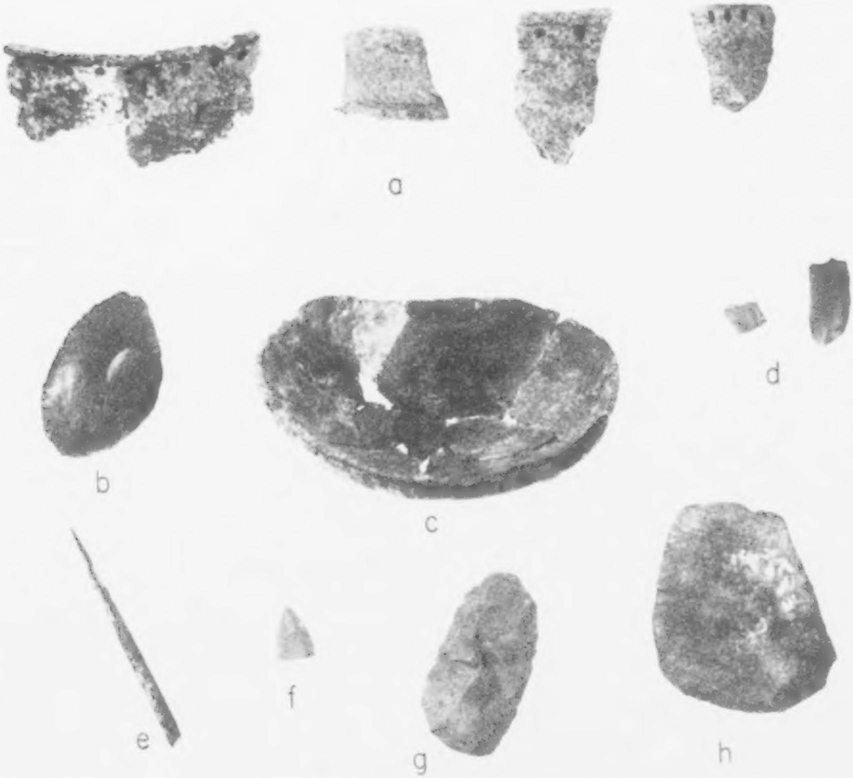
In the Hudson Bay Lowlands of Ontario both Blackduck and Selkirk pottery are present but barely and analysis of the pottery clay indicates that the vessels were not manufactured locally (Pilon 1987:217-218). As a rule, these northern sites produce only a few stone tools and some debitage but no pottery. The most common tools are expedient flakes struck from nodules of the locally available high quality Hudson Bay Lowlands chert (Julig 1988; Pilon 1987). The suggestion that the bone tool industry was likely of greater importance than the stone tool industry cannot be tested due to acid soil conditions. On the other hand, from the few southern sites with good bone preservation, such as Potato Island, McCluskey, and Pic River, there is relatively little evidence of a well developed bone tool industry. As a rule, both Selkirk and Blackduck pottery occur together throughout the Hudson Bay drainage system (Riddle 1980) but there are occasionally discrete boundaries between the two pottery traditions. At the Tailrace Bay site, near the embouchure of the Saskatchewan River into Lake Winnipeg (Mayer-Oakes 1970), Blackduck pottery dominated the late occupations which also included early 17th century European items (Ibid:289;353). In contrast, only slightly over 100 km to the northwest on Moose Lake, contact period sites containing only Selkirk pottery suggests a geographic break between the distributions of these two partially contemporary pottery traditions. Similarly, the GRS-27 site in The Pas, Manitoba lacked Blackduck pottery. At this site, destroyed by a subdivision, a rich bone tool industry was recovered by collectors. It consisted of scraper handles, awls, beads, gorges, unilaterally barbed harpoons, and "notched cylinders" (Mayer-Oakes 1970). Similarly, in the Southern Indian Lake area on the Churchill River in northern Manitoba Selkirk pottery was clearly dominant with only five Blackduck vessels among many hundreds of Selkirk vessels (Dickson 1980:150). A unique feature of the Selkirk pottery in the Southern Indian Lake region is the presence of plates, bowls, and cups, as well as pots (Dickson 1980:43-50; Wright 1971). Another unique pottery trait was to punch one to three small holes, approximately 0.35 mm in diameter, in the bottoms of some of the plates while the clay was still soft or, more rarely, the holes were drilled (Wood and Wasnick 1976:2). Such holes have also been recorded in the bottom of pots in the area (Wright 1971:11). It has been assumed that the perforated plates were oil lamps but, in lieu of carbonaceous residues, this is unlikely. Distinctive of all Selkirk pottery, in contrast to most Blackduck pottery, is the impression of the vessels with a simple twined fabric, often with spaced wefts and a range of cordage diameters.



BLACK AND WHITE PLATE LVI: NORTHERN ALGONQUIAN CULTURE ARTIFACTS TYPICAL OF MUCH OF NORTHWESTERN ONTARIO AND SOUTHEASTERN MANITOBA The rim fragments of Blackduck pottery vessels (a) exhibit typical decorative motifs, generally executed with a cord-wrapped stick; the encircling row of exterior punctates producing an interior row of bosses are also a characteristic decorative element. In the burial mounds of the Boundary Waters area between Ontario and Minnesota, small, specially made miniature mortuary pottery vessels (b) were placed with the deceased. Stone pipes, whether of tubular form or platform style (c), are exceedingly rare; a hollow wooden stem would have been inserted into the end of the illustrated specimen. A most unusual object is the stone amulet of a beaver from the Pic River site (d). Arrowheads (e) and scrapers (f) dominate the stone tool kits while biface knives (g) have variable occurrences, tending to be more common in the northerly regions of Ontario and in southeastern Manitoba. Unilaterally barbed antler and bone harpoons (h) are often present when soil conditions permit; harpoons with line holes like the specimen to the left would have likely been used for spearing large fish like sturgeon. The pottery gaming disc, like the pipe and beaver amulet, represents a very rare item. (Reproduced from Wright 1972b:Plate 25. Scale variable)

The stone and bone tool industries from the Southern Indian Lake region consisted of side-notched, corner-notched, and triangular arrowheads, scrapers, notched and unnotched bifacial knives, abraders, chipped and ground adzes, gravers, chithos, bone points, awls, beads, and unlaterally barbed harpoons (Dickson 1980:150). Chithos are a specialized scraper with purposefully blunted edges to prevent the tool from cutting into the hide during processing. Stratum I of the Neck site on Southern Indian Lake probably represents as close to a single component available. The deposit contained five pots, one pottery plate and a bowl, ten scrapers, six hammerstones, two bifacial knives, two wedges, one graver, an anvilstone, a mano, a scraping plane, a utilized firestone fragment, a paintstone, two bone awls and a bead (Wright 1971).

Recent studies of Blackduck and Selkirk pottery are revealing an increasingly large number of regional styles (Lenius and Olinyk 1990; Meyer 1998). Sophistication in pottery analysis, complemented by more comparative data, are allowing more precise insights into relationships between various bands. At the Goldsworthy site, a spring fishing locale on the western edge of the Boreal Forest of east-central Saskatchewan where the occupants had river access to Lake Winnipegosis, pottery attributes reflect typical Lake Winnipegosis and Lake Manitoba styles. Other pottery traditions identified at the Goldsworthy site include ones from the Plains and, of particular importance, some evidence of pottery style blending between the different pottery traditions (Meyer 1998). Incising on Blackduck pottery at the Stott site has also been attributed to influences from Plains pottery traditions (Hamilton 1982). Regional variations of Selkirk pottery, such as Clearwater Lake, Winnipeg River, Kame Hills, Kisis, and Pekoman, determined on the basis of pottery attribute differences still "...all share a very similar nonceramic tool assemblage..." (Meyer and Russell 1987:4). There is a need for more detailed classifications of pottery in order to determine regional and chronological variations but such studies do encounter trouble when chronology, for example, is based upon radiocarbon dates. There are also problems with samples recovered from mixed multicomponent sites with typical veneer deposits or the debris from burial mounds which are unjustifiably assumed to represent single components (Lenius and Olinyk



BLACK AND WHITE PLATE LVII: NORTHERN ALGONQUIAN CULTURE ARTIFACTS TYPICAL OF NORTHERN MANITOBA AND ADJACENT REGIONS A majority of the illustrated items come from the Southern Indian Lake region in northern Manitoba, now submerged under the waters of the Churchill River Diversion Project. Typical rims from pottery vessels (a) exhibit the hall mark attributes of twined fabric impressions and, usually, an encircling row of punctates which raise interior bosses. The stone knife (b) is only unusual in that it is unifacially flaked. In the centre (c) is one of the unique pottery bowls from the Southern Indian Lake region. Scrapers, a bone awl, an arrowhead, a chipped and ground adze, and a crude scraping tool, the latter frequently referred to as a chitho after an Athapascan word for the implement, make up d to h, respectively. (Reproduced from Wright 1972b:Plate 26. Scale variable)

1990). Such efforts, despite the contextual problems and precise dating, are necessary in order to glean insights into the regional variability which existed within NorthernAlgonquian culture through both time and space. Attaching broadly conceived ethnographic cultural abstractions to pottery traditions in a simplistic one-to-one fashion, as has already been noted, is fraught with unjustified assumptions given the *culturally permeable margins* surrounding such generalized constructs. For example, with reference to pottery and ethnicity, the western Cree are associated with Selkirk pottery while the eastern Cree generally did not adopt pottery, the western Ojibwa are associated with Blackduck pottery but the eastern Ojibwa shared the Ontario Iroquois pottery tradition, the Algonkin were involved with Ontario Iroquois style pottery in the west while the western Montagnais participated in a St.Lawrence Iroquois pottery style in the east. To compound matters further in this pottery tradition morass are the erratic time and space intrusions of Sandy Lake, Peninsular Woodland, Western Basin, and Maritime Algonquian pottery styles. It is apparent that the linguistic and general cultural fluidity characteristic of the Northern Algonquians is also reflected in their pottery styles and their participation in multiple pottery traditions. The foregoing is not to denigrate the importance of pottery to archaeological interpretations but simply to hold up a caution flag with regard to placing too much interpretative weight and faith on a single element of technology when it comes to the ticklish subject of ethnicity.

Subsistence:

Any cultural construct which extends from the Island of Newfoundland across the Canadian Shield and its margins into northeastern Alberta and involves five major vegetation provinces, namely Tundra, Lichen Woodland, Boreal Forest, Great Lakes-St.Lawrence Forest, and Parkland (McAndrews et al. 1987: Plate 4), incorporates people who participated in highly variable subsistence practices. These would have ranged from the extremes of netting seals to the operation of caribou pounds with funnelling lanes fanning out for miles from the entrapment pound. In all regions fishing would have been of great importance and could range from netting anadromous salmon, spearing sturgeon below major rapids, or building elaborate fish weirs fitted with sophisticated traps. While plants in the more northerly areas were not likely significant in terms of their caloric contribution to the diet their contribution as dried berries for winter consumption would have been vital in warding off the ever-present danger of scurvy associated with a predominantly meat diet. In more favourably endowed southerly regions, like southern Ontario and southeastern Manitoba, wild rice would have been an important element in the diet. In other regions a limited form of corn, bean, and squash horticulture was practised. Under the circumstances, what follows in this section are examples of subsistence variability starting in the east and advancing westward.

There is an exceptional documentary record of an early 19th century Beothuk food storage facility on the Exploits River in the interior of Newfoundland. One structure is described as being "...about forty or fifty feet long and nearly as wide" (Howley 1915:69).

Covered with bark and caribou skins the building contained deboned fall caribou meat stored in bark containers, each "2 cwt" (a cwt is a hundredweight and, in this instance, presumably refers to 200 pounds) with tongues and hearts stored in the centre of each pack. Lean caribou meat was stored in bulk as quarters. Near the storage structure were caribou fences extending from both sides of the River bank for "some miles" inland. The drive lanes were arranged in such a fashion that caribou driven into the river could be speared from canoes. The use of snares, presumably associated with the caribou pounds, is also mentioned (Ibid:xx). Across the river from the aforementioned storage structure was another of even greater size. Presumably people were nearby as it is unlikely that such large winter food caches would have been abandoned, even temporarily, to scavenging bears, wolfs, and foxes. Further, the presence of two such large caches would suggest that two different bands had joined forces in putting down the winter food supply and that the communities were living in close proximity to one another, at least during the winter. Another record of Beothuk food storage appears in a sketch by the Beothuk woman Shanawdithit (Howley 1915:Sketch VII) which illustrates dried caribou, salmon, lobster tails, seal skins with fat attached, caribou and seal bladders filled with oil, seal stomachs filled with intestines, and egg boiling baskets for drying and powdering sea bird egg yolks. Also included in the sketch was a sled made from a seal skin. None of the evidence of the preceding elaborate preservation and storage procedures, exclusive of the storage structures themselves and possibly some caribou longbones, would have survived in the archaeological record. The longbones, however, would have been broken for the fat rich marrow at the campsite and would only be represented by fragments. It cannot be overemphasized that in the majority of cases, particularly with reference to winter storage foods, there will be little or no archaeological evidence and, therefore, assumptions based solely upon recovered animal bones are rarely valid indicators of what was consumed, how much, and even at what time of the year.

From the foregoing documentary record it is evident that the Beothuk, even as late as the 19th century, relied upon both coastal and interior resources on the Island of Newfoundland despite the limited archaeological evidence of a significant pre-European occupation of the interior. Possibly interior occupations would have consisted of brief, fall caribou hunts with the meat, fat, and hides then being brought to the coastal winter habitations until these areas were blocked by the presence of Europeans. The preceding description of a storage structure on the Exploits River, of course, pertains to a time when the Beothuk were being increasingly forced into the interior of the Island by the European occupation of the coast. Of major importance on the coast would be seal and, in particular, the harp seal (*Phoca groenlandica*) who whelp on the pack ice in late winter and moult in the spring. Harp seal, like all other major animals associated with the Island of Newfoundland, such as capelin, salmon, and caribou, are migratory and, therefore, potentially unavailable under unusual circumstances like prevailing offshore winds that remove the pack ice from the reach of hunters or, conversely, when onshore winds pack the ice onto the shore barring access to the seal herds. Periodic human extinctions or abandonments of the Island have been attributed to this potential unreliability of major food animals (Tuck and Pastore 1985). But, as has been astutely pointed out, such conditions are often quite local in character with more accommodating access to and from the sea ice near at hand (Renouf 1999a:410-411). Another serious potential resource problem of availability is the evidence from Greenland and elsewhere that caribou herds suffer periodic episodes of population decline lasting for 50 years or more (Rowley-Conwy 1990:Fig.7, 24-25). Other natural phenomenon, such as tundra fires and ice storms, could also periodically impact caribou populations.

The Beaches site on the east coast of the Island of Newfoundland (Carignan 1975) produced food remains of immature harbour seal (*Phoca vitulina*) and harp seal, caribou, black bear and polar bear, sea birds, and geese, with the immature seal indicating an early spring occupation. At the Boyd's Cove site on the same coast there were more land than marine mammals with beaver, otter, and marten being common although polar bear and migratory waterfowl were also present suggesting a late winter to late fall occupation (Pastore 1984). While the killing of a large and dangerous sea mammal like the polar bear could suggest the lethal nature of Beothuk weaponry it is likely that bears could have been trapped with little personal risk using a device called a dead-fall or were harpooned and lanced at sea from the relative safety of a water craft.

Plant foods have not been reported from archaeological sites in Newfoundland. There is, however, a pertinent documentary statement in John Guy's Narrative of 1612 (Howley 1915:17) where some Englishmen and Beothuk shared a meal and "...one of the sauages presently ran to the bank side, and pulled up a roote..." and "...after dividing it among the foure, it tasted very well...". From the description the tuber was most likely from an arrowhead plant, also known as swamp potato (*Sagittaria graminea*), (Angier 1989:26-27; Fernald 1970:89-90). It can be assumed that a wide range of berries, greens, and tubers were consumed along with fungi and, in times of dire need, the inner cambium layer of the bark of certain tree species.

There is an excellent description available regarding turn of the century caribou hunting and while it pertains specifically to the interior of Labrador almost certainly has much wider application (Loring 1997). William Cabot's observations in1906 of a fall caribou hunt in the Labrador interior included rare details concerning the 20 to 25 people who occupied three tents. For example, the four men and four boys did all the killing by spearing the caribou in the water. Between 1,200 and 1,500 animals were killed, of which 300 to 500 carcasses were dried in the wind and sun while bunches of marrow bones were dried in the trees. Caribou were also captured by snares set in pounds. The Innu (Nascapi) women at this fall hunt camp were fully occupied making pemmican from meat and fat with the fat being the key ingredient and the meat secondary. It was this need for fat which accounted for the wastage of much of the meat. While the foregoing will strike many as a gross misuse of food it was undoubtedly viewed in a quite different light by the natives, namely a religious light. "All explanations were predicated on an understanding of the symbiotic relationship between human beings and animals, and on the awareness that animal spirits need to be honored, cajoled and respected, and that human behavior can have influences in nearly all aspects of the environment: social relations, weather, the absence or presence of game, sickness and health. Dishonor the animal spirits and the Animal Master - the King of the Caribou - would send his wards elsewhere, would deny the hunters their prey" (Loring 1997:186).

Along the Labrador coast faunal remains from sites reflect a mixed land-sea economy (Loring 1989; 1997) which prevailed until the Montagnais were forced away from the coast by recent Inuit arrivals. This partial isolation into the interior led to the late, specialized inland-caribou adaptation of the Montagnais recorded by ethnologists (Speck 1935) and stands as a caution against uncritically accepting early 19th and 20th century ethnographic accounts not privy to precontact archaeological history. In the interior of northern Québec, in the Lac Caniapiscau region, caribou were most important but waterfowl, beaver, porcupine, and marten are also recorded (Denton 1982; Nolin 1989). Fish were undoubtedly important but the fragile remains rarely survive in the generally poor soil conditions. Fish were also frequently processed to remove the bones which were then fed to the dogs. Most sites appear to be fall to early winter camps and the frequent occurrence of calcined caribou bone fragments suggests the rendering of fat for soups and pemmican. Further west, in the James Bay drainage, spring to fall hunt sites specializing on the hunting of geese and swans have been recorded (Denton 1993:80-81) with mammals being mainly represented by muskrat, beaver, and caribou although an occasional seal is also recorded. South in the Lac St.Jean area moose was important as well as caribou, beaver, fish, and dog (Chapdelaine 1984a:Tableau 27; Simard 1970). As elsewhere in much of eastern North America dog feasts represented an important element of Northern Algonquian ceremonialism.

In the Hudson Bay Lowlands of Ontario caribou remains occur at most sites as well as fish, waterfowl, and small to medium sized mammals (Pilon 1987). Direct evidence of sea mammal hunting is absent from the archaeological record. Dog remains have also been recovered from a probable Period V fishing camp on the Winisk drainage (Lister 1988:77). Human existence throughout the Canadian Shield and, in particular, in the Hudson Bay Lowlands, would have been impossible without the highly dependable fish resource. Archaeological evidence of fish and fishing is minimal, however, given the fragile nature of fish bones and that the main form of capture was in weirs and nets. There is historical documentation of between 500 to 600 whitefish being captured in weir-traps in a single day (Ibid:75). Fish, mainly whitefish and suckers, were an important winter storage food for both humans and dogs. In fact, winter sites were often situated adjacent to ice-free, fast water where fish could be trapped during the colder months of the year (Nolin 1989).

Fishing has been historically documented as being the major reason for occupations around the rapids of the St.Marys River at Sault Ste.Marie near the juncture of the upper Great Lakes, although surviving evidence of such activity is limited. Even the Whitefish Island site in the aforementioned rapids, with its 2,000 years of seasonal occupations, produced mainly mammal remains (Conway 1977). This would suggest that the fall catch of whitefish was being preserved for winter consumption but were processed away from the capture site. Artifacts which can be directly associated with fishing, such as harpoons, were limited to a couple of specimens albeit documented evidence indicates that large dip nets operated from canoes were the major fishing device. Further east at the year round occupied late 16th to early 17th century Providence Bay site on the south coast of Manitoulin Island evidence of fishing was dominant, representing 80% of the faunal assemblage and consisting mainly of suckers and walleye or pickerel (spring) and lake trout and whitefish (fall). It was noted from the whitefish cranial parts that 40 to 45 cm fish were consistently represented indicating the use of gill nets with a 7.5 to 10.0 cm weave pattern. Common loon (*Gavia immer*), trapped accidentally in fish nets, were also common at this site. The ratio of fish vertebra to cranial remains for the suckers was from 4:1 to 6:1 while the equivalent ratios for lake trout and whitefish were 10.1 and 17:1, respectively, suggesting the processing of the latter two fall spawning species at capture sites away from the village while the spring spawning suckers were captured locally in the adjacent river and taken to the village intact. (Smith and Prevec 2000; Beverley A. Smith, Michigan State University: personal communication). The most common mammal was beaver followed by cervids represented by deer, caribou, and moose. Mammals composed 14.5% of the faunal assemblage which, along with fish, totalled 94.5% of the total animal remains. Regrettably the common error of assuming that faunal recoveries equal diet is perpetuated.

Flotation was employed to recover carbonised plant materials at the Providence Bay site. Corn and beans were the only cultigens found along with fleshy fruits, grasses, tubers, and other items. The scarcity of cultigens when compared to nearby Ontario Iroquois sites led to the suggestion that they were not grown locally but were imported foods. Such an assumption, however, is unwarranted when there is evidence of corn farming at nearby contemporary villages like the Mississagi site on the shore of Georgian

Bay (Brizinski 1975; Wright 1965). Indeed, the very fact that such plant remains were accidentally carbonised leaves the whole matter of intensity of cultivation and even absences and presences open to question. Another important site in the same general area is the 9th to the 14th century stratified Juntunen site on Bois Blanc Island, Michigan, at the east end of the Strait of Macinac between lakes Huron and Michigan (McPherron 1967). While a wide range of animal species were present (Ibid:Table 24) sturgeon (*Acipenser fulvescens*), whitefish (*Coregonus clupeaformis*), beaver, and dog, in that order, were most abundant. A record of plant remains was also made. Carbonised corn kernels were present and although it has been suggested that corn was not grown on the Island but was a traded product (Mason 1981:318) the evidence of some limited horticulture along the shore of Georgian Bay on Lake Huron suggests that it could have been either grown locally or traded into the area. Other plants used at the site by frequency of occurrence were hazel nut (*Corylus rostrata*), pin cherry (*Prunus pennsylvanica*), blackberry/raspberry (*Rubus spp.*), cleavers (*Galium spp.*), elderberry (*Sambucus pubens*), and some other minor species (McPherron 1967:Table 23).

Further west along the north shore of Lake Superior, although bone preservation was poor, beaver were the dominant species at the Nyman site at the mouth of the Michipicoten River. Even a single carbonised corn kernel was recovered (Dawson 1976b:38) which, given the locally unfavourable growing conditions, was likely introduced to the site from the east or south. In southwestern Northern Ontario the Period V occupations of the Long Sault site on the Rainy River separating Minnesota and Ontario produced mainly beaver but bison, dog, small fur-bearers, sturgeon, suckers, and pickerel were also represented and clams were stated to be common (Arthurs 1986). At the same site in AD 1857 Henry Hind mentioned "helianthii" growing wild, as well as an abundance in "native gardens". Wild oats are also mentioned (Kenyon 1986:41). The wild oats would be wild rice (*Zizania aquatica*) while the helianthii refers to Indian potatoes (*Helianthus tuberosus*).

Wild rice in the Boundary Waters area of Ontario, southeastern Manitoba, and adjacent states would have provided an important winter storage food but its significance is generally archaeologically invisible. Archaeological sites located adjacent to current wild rice stands do, however, indirectly suggest the plant's importance (Rajnovich 1984). Nutritionally wild rice is approximately equivalent to white rice, oats, and corn flour (Vennum 1988:Table B, 40) but is superior to the other grains in certain minerals and vitamins. One of the earliest documentary references to wild rice in AD 1662-63 pertains to the Odawa, probably around Manitoulin Island (JR XLVIII:121). The description by the Jesuit missionary includes specific details of the binding of stocks prior to the ripening of the grains in order to aid the harvesting process. Processing procedures included immediately drying the grains to avoid mould. Air drying and sometimes heat was used in the drying process prior to roast-drying and curing on a scaffold. If the grains are not heat dried then parching become essential. Parched rice would then be hulled by flailing or heating and finally winnowing. For a detailed description of these procedures see Vennum 1988:Chapter 4. Although wild rice will keep almost indefinitely when properly cured and stored it is generally a late summer and, in particular, a winter food. Productivity, however, is unpredictable as wild rice is particularly vulnerable to high water and other inhibiting environmental factors. In the Rainy Lake District between AD 1814 and 1853, for example, the Hudson Bay Co. records state that there were ten good years of rice harvest and thirteen bad years (Vennum 1988:Table A,23). With the first archaeological evidence of rice processing during Period IV (1,000 BC-AD 500) wild rice was likely responsible for the increased evidence of population densities in the wild rice producing areas of Ontario and adjacent Manitoba and Minnesota. Occasionally clay lined rice jigging pits and parching hearths have been identified (Wright 1999:Fig 75) but such features tend to be rare suggesting that alternative processing methods were often in use.

Most plant processing technology either does not survive the passage of time or is not recognizable as such by archaeologists. For example, on Southern Indian Lake in northern Manitoba, the unique plates and bowls and an occasional pot had one to three holes punched through their bottoms prior to firing or, more rarely, the holes were drilled after firing. While it has been suggested that these containers functioned as oil lamps (Wood and Wasnick 1976) the absence of carbon residues makes this unlikely, as is the expenditure of oil in lieu of access to sea mammals. Oil lamps are also hardly a necessity in such heavily wooded areas. Chemical residue studies could possibly cast some light on the function of these containers. It is speculated here that they may have been ingenious berry drying devices. The Ojibwa boiled berries prior to the drying process to produce berry cakes for winter consumption (Densmore 1974:321) while in Southern Indian Lake women may have boiled berries in pottery containers with the holes temporally plugged and at an appropriate stage in the process the plugs could be removed to permit the liquid to drain off. Said liquid, with its soluble Vitamin C content, could then be captured as it would have constituted a nutritious tea or stock. Under such a scenario the heat retention qualities of pottery would have functioned as a final element in the drying process. Heat, however, would have been a critical factor. It is known that the optimum temperature for drying in order to retain nutritional value is between 110° and 118°F (Beyer 1976:22) and that high temperatures will cause fruits and vegetables to lose approximately 65% of their nutritional value (Ibid:23). Water boils at 212°F, therefore boiling as part of the process in the production of dried fruit would have had to be carefully monitored. During the preparation of dried berry cakes it was of critical importance to remove excess moisture quickly in order to avoid spoilage by bacteria. Thus, it is speculated that some innovative woman or women on Southern Indian Lake invented a utensil that could dry berries and collect their vitamin rich juices in a single process.

As an aside, the importance of plants to nutrition and acting as an adjunct to meat is frequently overlooked by archaeologists discussing subsistence for the simple reason that, in most instances, plant materials do not survive in the archaeological record. Early historic documents generally suffer from a gender bias with men talking to men regarding their hunting activities while women, who were rarely questioned for whatever reasons, were the gender most intimately associated with plants. Thus a native man may well describe in detail to a European how to kill moose but would never think to mention that the reason his family did not go hungry in the spring was because of greens gathered by the women folk or that scurvy was avoided in the winter thanks to berries dried by the women during the previous summer. Plants not only provided the all important Vitamin C or ascorbic acid but also carbohydrates and calcium (Shay 1980:Table 13). Tom Shay's article, although focussed on Manitoba, is a particularly good consideration of the range of factors relating to plant importance as well as the marked decrease in the availability of useful species as one advances from the deciduous forests in the south to the coniferous forests in the north. Regarding the aforementioned gender bias relative to plants it would still appear to be reflected in the current dominance of women ethnobotanists compared to their male counterparts.

As has been noted on a number of occasions, the more southerly Northern Algonquians occupied regions with seasonally more diverse foods than were available to their northern kinsmen. The Stott site in the Parkland of southwestern Manitoba on the Assiniboine River was located in proximity to a number of different ecological zones. Bison remains were most common but canis, likely dog, beaver, and rabbit/hare were also represented (Hamilton 1982). Evidence of marrow and grease extraction for pemmican production was identified. Aschkibokakn, a Blackduck complex site located at the juncture of two rivers close to Lake Winnipegosis and near the boundary between the Boreal Forest and Parkland, contained mainly fish remains, especially walleye, sucker, and pike. Clams were common but mammals were less well represented, consisting of beaver, muskrat, moose, and waterfowl but significantly with little evidence of bison (Snortland-Coles 1979). The site was a warm weather occupation which clearly focussed on spring spawning fish. This scarcity of evidence relating to bison hunting supports an ethnographic observation that, "In the vicinity of Swan River Fort, west of Lake Winnipegosis, a group of Cree remained in the forests to hunt moose, elk, and beaver, rarely venturing out into the nearby prairie lands" (Mandelbaum 1940:183).

Moving north in Manitoba, the Tailrace Bay site at the embouchure of the Saskatchewan River into Lake Winnipeg produced equal proportions of fish and mammals plus some bird and turtle. Fish species were mainly lake sturgeon followed by northern pike with much lesser representations of walleye, white sucker, and other species (Lukens 1970:Table 30). Mammals, in order of importance, were snowshoe hare (*Lepus americanus*), beaver (*Castor canadensis*), moose (*Alces alces*), dog (*Canis familiaris*), black bear (*Ursus americanus*) and numerous less frequent species including bison (*Bison bison*) (Ibid:Table 32). Collectively, the faunal evidence indicates a spring to early summer occupation of the site.

Settlement patterns:

As could be anticipated for the maritime adapted Beothuk of the Island of Newfoundland major settlements are either directly on the coast or had ready access to coastal resources (Holly 1998). Newfoundland river and interior lake systems were ideally configured for seasonal access between the coast and the interior. Unlike the Palaeo-Eskimos, however, there does not appear to have been a significant occupation of the outer coastal islands but this would not have been due to a lack of maritime capabilities. For example, the Beothuk are reported to have travelled to Funk Island, 60 km off the east coast, in order to gather bird eggs (Howley 1915:28). One must also wonder what archaeological record seasonal egg gathering forays to offshore islands would have left. While there are verbal descriptions of Beothuk bark canoes only canoe models from a early 19th century grave survive (Reynolds 1978: Fig.6) and it would not be appropriate to assume that the functioning canoes were accurately replicated by the models. In many respects these canoes, with their elevated midship gunnels, resemble the ocean going Maritime Algonquian canoes. Beothuk canoes could reach lengths of 6.7 m and have been estimated to have weighed as much as 45 kg (Howley 1915:15). The bark canoe was essential to all Northern Algonquians but the tides, rip currents, and heavy seas of the Atlantic Ocean would have certainly required finely honed maritime skills.

Given the distributions and the often seasonal nature of the food resources of the Island of Newfoundland the establishment of base camps along the coast would have been the safest option (Rowley-Conwy 1990:25). While the interior would have been exploited in the fall for caribou the 19th century documentation of Beothuk interior winter settlement was likely a late adjustment of the natives to being incrementally forced off the coast by European fishermen and settlers (Wynn et al. 1987:Plate 20). An ideal winter base camp would be situated in a sheltered locale in close proximity to the coast with access to both seal and caribou and ready transport routes on the sea along the coast and river routes, via either water or ice, to and from the camp. Summer camps, on the other hand, were situated along the more exposed sections of the coast. Both types of seasonal sites favoured small, sheltered bays with fresh water and gravel or sand beaches for landing canoes. The Cape Freels 2 site on the east coast is a good example of a summer camp being located on a inlet protected from direct exposure to the Atlantic (Carignan 1977). While rock clusters associated with charcoal and tool manufacturing were common (Ibid:Figs.28 & 29) there was no discernible evidence of house floors. In contrast, the Beaches site on Bona Vista Bay contained numerous pit houses. At the time of occupation the site would have been connected to an island by a narrow strait now destroyed by the sea. In AD 1875 it was noted that the site had two rows of house pits totalling nineteen structures which were subsequently destroyed by erosion (Carignan 1975:139). Carignan excavated four contact period pit houses ranging in diameter from 3.7 to 7.0 m and containing central hearths. This particular site, like Cape Freels 2, was protected from the open sea but with ready access to both the sea via sheltered water routes and to a major river mouth 16 km away. It is pertinent to note that until recently all Beothuk pit houses from both the coast and the interior pertain to the contact period. House pits examined along the Exploits River, for example, lacked stone artifacts but contained iron implements (Thomson 1983:64). At Port au Choix on the west coast of the Island, however, a 6th century house pit was discovered (Renouf 2000:113-114). It appears that prior to the contact period house structures were more ephemeral from an archaeological perspective with pits being so shallow they cannot be discerned from the surface. In addition to circular pit houses a square structure associated with 3 m diameter pole tepees with central hearths and covered with caribou skins were recorded on the coast in AD 1612 (Howley 1915:15). More than eleven pit houses, with some possibly overlapping, were recorded at the Boyd's Cove site (Pastore 1984; 1986). European materials would date the site to the late 17th and early 18th centuries. Particularly detailed house construction information was recorded for this site. A large, 9.4 by 6.1 m rectanguloid structure which was contemporary with the more common circular structures at the site had a 5 by 1 m hearth associated with eleven sleeping depressions and two entrances. Presumably the sleeping depressions would have been filled with balsam bough mattresses. Dirt had been scraped out of the house floor to a 20 to 30 cm depth to form periphery walls; as much a levelling activity as pit digging. Periphery post moulds were angled inward at 10° to 15° as supports for the horizontal poles which would have supported the rafters. In contrast, all interior posts were set vertically into the ground. The population estimate for the Boyd's Cove site is between 30 and 49 which would represent an entire band (Pastore 1986:223). The rectanguloid structure has been compared with the Montagnais shaputuan, a multi-family dwelling which was also used for ceremonial purposes. A 8 by 4 m shaputuan on central Labrador coast, dated to AD 250 (Loring 1989:49) was discussed in Volume II under Late Eastern Shield culture (Wright 1999:715).

At the two hectare Gould site in Port au Choix, dated around AD 500, a number of pits had been excavated into the peat of the forest floor. One of these was 3 by 2 m and 24 cm deep with a central 5 cm thick imported burnt sand layer containing calcined bone, fire cracked rock, red ochre, chipped stone tools including retouched flakes, pot sherds, and a fragment of beaver hide (Renouf et al. 2000). The discovery of this site

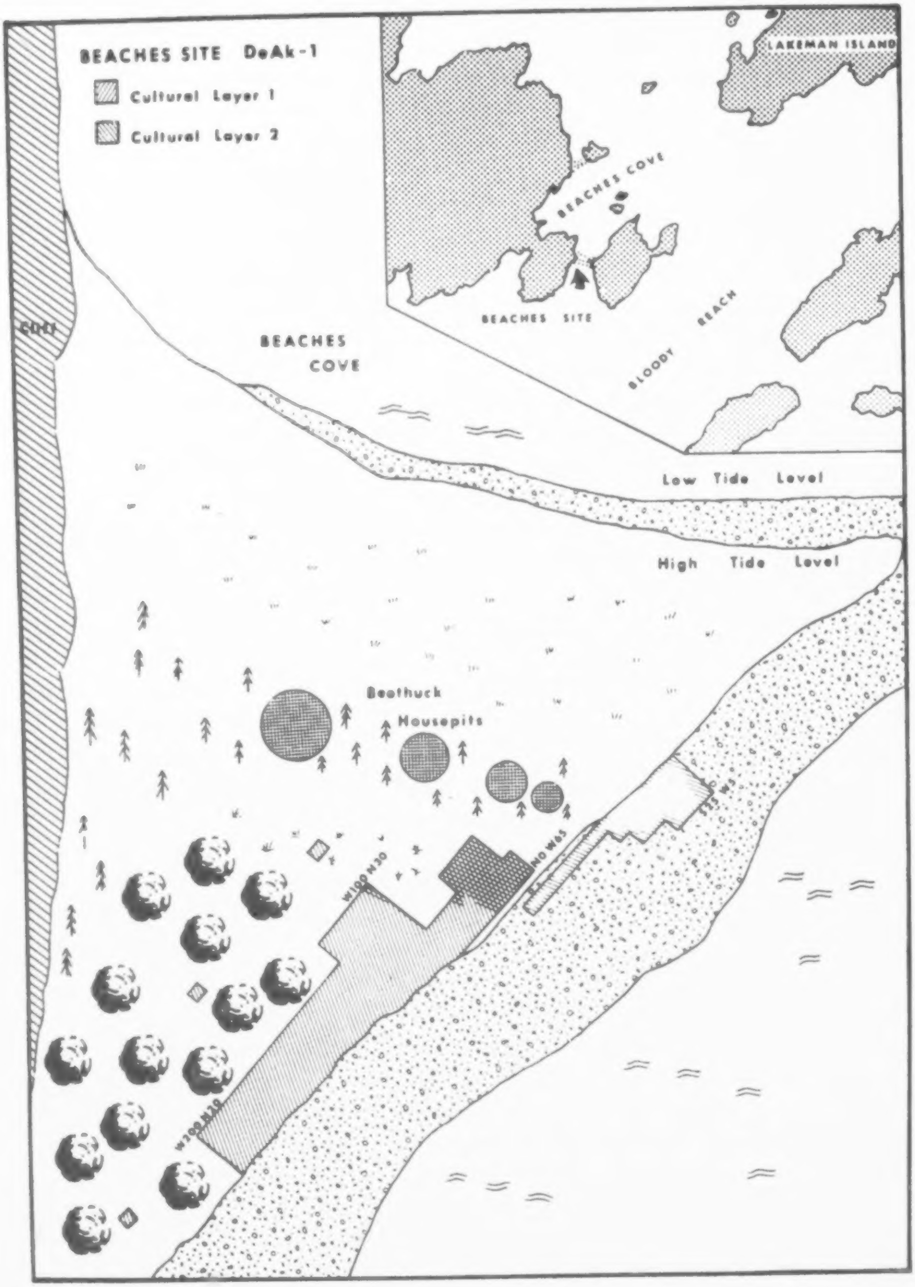

BEACHES SITE DeAk-1
Cultural Layer 1
Cultural Layer 2
LAKEMAN ISLAND
BEACHES COVE
BEACHES SITE
BLOODY BEACH
BEACHES COVE
Low Tide Level
High Tide Level
Beothuck Housepits
W100 N30
N0 W65
S15 W5
W200 N20

FIGURE 135: SITE PLAN AND LOCATION OF THE BEACHES SITE ON THE EAST COAST OF NEWFOUNDLAND The site location is typical of coastal base camps with protection from the sea but with ready access to it and other resource areas, like islands and nearby rivers. (Reproduced from Carignan 1975:Fig.3).

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was of critical importance for two reasons. First, it established the existence of semisubterranean dwellings in precontact times and, second, the directly associated Late Palaeo-Eskimo Dorset artifacts clearly demonstrated the contemporaneity of the ancestors of the proto-Beothuck and the Dorset which previously was only surmised on the often questionable basis of radiocarbon date overlaps and the proximity of the settlements of the two peoples to one another.

Exotic stone, indicative of contacts with other people, is present in low quantities on many Period V Newfoundland sites. Ramah quartzite from northern Labrador is one of the most frequently encountered. The fine quality, grey-green chert deposits of southwestern Newfoundland where widely utilized along the south coast (Simpson 1984:130-131) and was traded northward as far as the north shore of the Gulf of St.Lawrence (Pintal 1992). In the majority of instances, however, local stone was the major source for tool manufacture.

A distinctive characteristic of Point Revenge complex sites along the Labrador coast and the north shore of the Gulf of St.Lawrence is the dominance of Ramah quartzite from northern Labrador. Ramah quartzite can represent between 95% and 98% of the chipped stone debris (Fitzhugh 1978:165). In fact, there is a tendency to culturally identify sites simply on the basis of abundant Ramah quartzite. Of note is the absence of Point Revenge sites north of Nain whereas the Ramah quartzite deposits are 240 km north of Nain. This could suggest either trade with contemporary Late Palaeo-Eskimo people or special expeditions to acquire the stone which have left little archaeological trace. Despite the fact that the majority of currently excavated sites occur along the coast it has been proposed that the Point Revenge complex, which led into the Innu or Montagnais of the contact period, were more adapted to the interior than the coast (Loring 1983). Most archaeological evidence indicates a settlement pattern focussed on interior locales on rivers but within 25 km of the coast suggesting that near coast winter settlement, as on the Island of Newfoundland, was the norm (Rowley-Conwy 1990:25-26). Coastal sites are typically situated in the inner bays, at estuaries, and on coastal islets located between the taiga of the exposed coast and the barren highlands of the interior. Site features generally consist of isolated cobble hearths, evidence that dwellings were flimsy tent structures which have left little archaeological trace (Fitzhugh 1978:169). At one site a 2 m diameter structure, delineated by the distribution of artifacts and Ramah quartzite chipping debris (Loring 1983:56), was associated with possible weight stones and hearths. At the same site a 5 m diameter tent floor with a raised central cobble stone hearth was also recorded (Loring 1985). By the European contact period tents between 2 and 3 m in diameter with central hearths and an earthen periphery wall 20 to 50 cm wide and 10 cm high to hold the tent edge down are recorded (Loring 1983:46).

There is some limited settlement pattern evidence from Northern Algonquian sites in the interior of Québec at Indian House Lake. Such sites are typically characterized by large quantities of Ramah quartzite. Tools, chipping debris, and calcined bone concentrated around hearths of fire cracked rock suggest single family tent floors (Samson 1978:196). Tent rings, demarcated by weight stones, are also recorded. The occupation of this interior region until the contact period, however, appears to have been limited. The few sites involved are characterized by broad vistas overlooking spring and fall caribou water crossings. It is inferred, given the dominance of Ramah quartzite, that the region in precontact times was only seasonally exploited by bands close to the coast.

Along the Kanaaupscow River, 200 km east of James Bay, multi-component camps occur along the west bank of the River (Séquin 1981:Figs 4 & 5) and are characterized by concentrations of burnt bone suggestive of fat rendering for pemmican production. In the same area what would appear to be an 8th century shapuatan is described as having a hearth 8+ m long (Chism 1981:25) associated with small side-notched arrowheads, end and side scrapers, utilized flakes, a few pottery sherds, native copper fragments and abundant red ochre. The presence of Ramah quartzite indicates some limited contact with the east coast. Stone tool manufacturing activities in both single family dwellings and the multi-family longhouse dwellings on the headwaters of the Grande Rivière were demarcated by the detailed plotting of the distributions of cultural debris (Séquin 1995:Figs.7-9). A late 18th to early 19th century goose and swan hunt camp in the same general area contained thirty-eight single family dwellings and sixteen multi-family longhouses or shapuatans (Denton 1993:Figs.4 & 5). Longhouse lengths averaged 9 m and the dwellings contained two or more centrally aligned hearths rich in calcined bone. Entrances were recorded at both ends. Single family dwellings were more or less circular, ranging from 3 to 6 m in diameter with an average of 5 m. Such native style dwellings were still being constructed until quite recently in areas of northern Québec (Laliberté 1982; Rogers 1963). Ethnographic records indicate that winter lodges were placed well back from the water on the western shore for protection from the prevailing northwest winds. Sites were also generally not reoccupied until firewood and balsam boughs for bedding material had an opportunity to regenerate (Rogers 1963). It can be assumed that food animal numbers would also have benefited from hunters leaving an area fallow for a period of time.

In the Lac Caniapiscau area, now a reservoir of the Baie James Project, river and connecting lake systems provided access to Hudson Bay, the eastern Atlantic, Ungava Bay to the north, and the St.Lawrence River to the south. While human occupation of the region has been traced back to Period III the majority of the sites pertain to Period V (Denton 1989:Fig.2) and "Comparativement à la période préhistorique ancienne, une occupation de nature beaucoup plus permanente s'installe à l'intériur du Québec-Labrador au cours de la période récente" (Denton 1989:74). Most precontact sites are situated at narrows along major drainage systems on exposed, elevated, and well-drained land consisting of moraines, drumlins, and eskers (Denton 1981:Tableau 14). Such locales provided not only good viewing areas of caribou movements but also access to productive fishing. For example, the GaEk-1 site, occupied throughout Period V and at the end of Period IV and attributed to the ancestors of the Motagnais and Cree, was strategically situated relative to winter and summer prevailing winds with unbroken vistas in a number of directions for observing caribou movements as well as being in proximity to rapids with their fish resource (Nolin 1989:Fig.3). The presence of most dwellings, exclusive of contact period earth ring shallow pit structures, and whether they were single family or multi-family structures was determined by the locations of hearths and associated cultural debris. As weight stones around the peripheries of structures are lacking it is inferred that the tent cover was anchored with horizontal poles. Local quartz is the dominant chipping material although Ramah and Mistassini quartzites are common; the former being located 700 km to the northeast and the latter 500 km to the southwest. Cherts, likely from Hudson Bay or James Bay and possibly the Labrador Trench 200 km to the east, have also been noted. All of the foregoing exotic stones are indicative of far flung contacts and/or trade although the major interactions were definitely east and west rather than south or north (Denton 1989; Nolin 1989).

A distinctive quartzite from the Mistassini area of north-central Québec was widely traded to the south into Lac St.Jean and the Saguenay River and north into the La Grande River (Denton 1998:Fig.1). While less important in the south during Period V when local cherts in the Lac St.Jean region were most popular, Mistassini quartzite use increased during the same period in the Québec Plateau to the north and also appeared along the north shore of the Gulf of St.Lawrence. It is rare or absent, however, on the western-most James Bay sites. Ramah and Mistassini quartzites frequently are found together and are indicative far flung relationships. Most large archaeological sites in the Lake Mistassini and Lake Albanel area pertain to quarrying activities and preform production. Recent work, however, has located smaller habitation sites inland from the lake shores and at higher elevations than the quarry sites (Denton 1998:29).

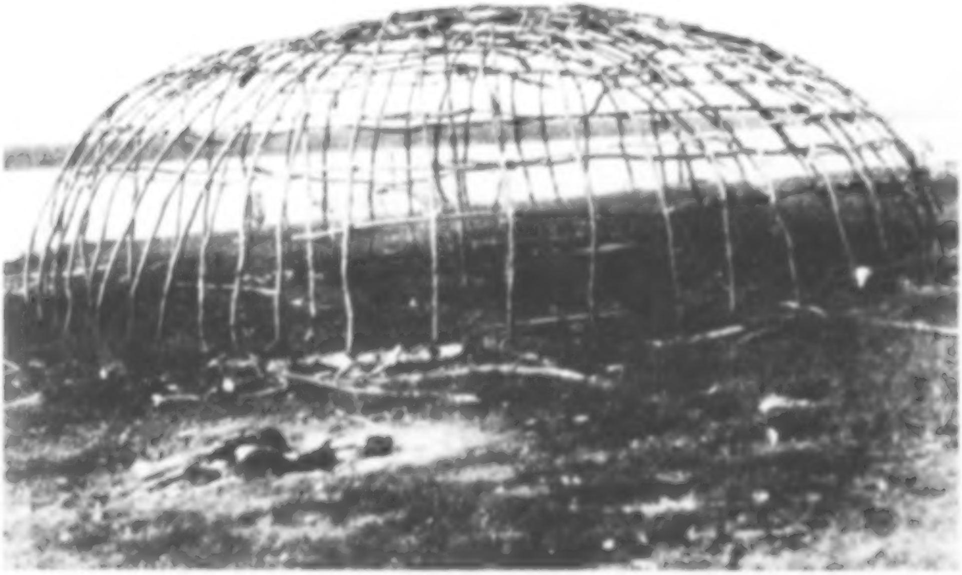
The wide ranging contacts evidenced by the distributions of exotic stones throughout the Québec-Labrador Peninsula likely reflects the importance of a form of life insurance premised upon mutual cooperation in a region where resource availability could fluctuate in an unpredictable fashion (McCaffrey 1989:106). Flexible, cooperative inter-band relationships would have been necessary for survival. Indeed, much of the exotic stone probably relates to gift exchange required to cement social relationships established through marriage and involving reciprocal responsibilities. In Québec and Newfoundland-Labrador the association of exotic stone materials with their known geological sources constitutes the best indicator of Period V social and political interrelationships between bands. Pottery, indicative of southern and western contacts, is only frequent in western Québec although stray finds of western style Canadian Shield pottery, like Blackduck, have been reported from the La Grande Rivière (Ethnoscop 1993:173). Given the exceptional mobility of people, occasional "exotics", including pottery styles, are to be expected.

Lac St.Jean and the Saguenay River to its embouchure into the St.Lawrence River appears to have been a major meeting place for people, particularly during the summer. Most of these people would have been Northern Algonquians from different regions of the interior and the north shore of the Gulf of St.Lawrence. Pottery styles are represented by a mix of St.Lawrence Iroquois and Ontario Iroquois styles with Owasco pottery varieties appearing earlier. What also reflects the cosmopolitan character of the region is the variety of exotic stone such as Ramah quartzite from northern Labrador, Mistassini quartzite from north-central Québec, rhyolite from Maine, Onondaga chert from the juncture of lakes Ontario and Erie, and jasper from Pennsylvania, in addition to more local materials from the Gaspé and Lac St.Jean proper (Chapdelaine 1984a:Fig.21). Research has recently identified Northern Algonquian sites on the Gaspé coast across the St.Lawrence River from the mouth of the Saguenay River. Not only does the technology of these sites resemble the Point Revenge complex but Ramah quartzite is the most common stone type (Dumais et Poirier 1989:17). Attributed to the Montagnais, the settlement distributions were keyed to ease of travel between the estuaries and their hinterlands.

There is increasing evidence that regions to the east along the north shore of the Gulf of St.Lawrence also represented a significant interaction sphere involving widely distributed populations. Continuity of occupation is attributed to the Montagnais for more than a 1,500 year period (Pintal 1992:66). During the latter portion of Period V there is an increase in Labrador materials like Ramah quartzite and Saunders chert but cherts from western Newfoundland were also important throughout the period while local materials were little used (Ibid:Fig.1). The current evidence suggests that during Period V southern Labrador, the Island of Newfoundland, and the Strait of Belle Isle, were all involved in interrelationships with a number of widely dispersed populations (Pintal 1989).

In southwestern Québec major, warm weather base camp sites are situated on the larger bodies of water from which small foraging parties could exploit the smaller lakes and rivers (Marois 1974:129); a typical pattern of settlement across the Canadian Shield. As water levels across most of the Shield have been stable for thousands of years such sites, which were seasonally returned to time and again, are characterized by considerable mixture of the cultural debris, frequently representative of thousands of years. In the Lake Abitibi region on the Québec-Ontario border evidence of external contacts relate mainly to the south rather than the west (Marois et Gauthier 1987) with Ontario Iroquois pottery styles being dominant from the 10th century to the contact period. Western Basin culture pottery styles (Macinac complex) are also present. The latter is a pottery tradition particularly common from Lake Abitibi to Georgian Bay on Lake Huron. As is normal, there is the difficulty of attempting to isolate individual components at these large base camps despite meticulous excavation procedures (Ibid:Figs.47-50). The shallowness of cultural deposits, subjected to bioturbation disturbance such as tree falls, human and animal activities as well as cryoturbation disturbance caused by freeze-thaw processes, involved time spans of thousands of years has permitted the survival of only a very weak physical record of the sequences of human occupation at most sites. For example, at the DaGt-1 site south of Lake Abitibi cultural deposits on a rocky point at a narrows in a lake contained occupations ranging from AD 1000 to the contact period but evidence of stratigraphy was totally lacking (Côté 1993). At this site a laudable, if not entirely convincing attempt to demarcate house structures was made. Regardless of cultural intermixture it was apparent that most cultural debris was associated with discrete hearth floors. The cosmopolitan nature of the occupation was not only reflected in the Ontario Iroquois pottery vessel and pipe styles but also in the occurrence of Onondaga chert from the juncture of lakes Ontario and Erie, Mistassini quartzite from north-central Québec, Lake Abitibi quartzite, and other exotics although local quartz was the dominant worked stone (Ibid:Fig.17). Of particular interest was the recovery of a fragment of Atlantic Scallop (*Placopecten magellanicus*) whose northernmost distribution is the Gulf of St.Lawrence (Ibid:footnote 5).

While the vast majority of Northern Algonquian sites investigated by archaeologists pertain to the large warm weather base camps there are some exceptions. A 0.6 ha, 16th to early 17th century Odawa village on the south coast of Manitoulin Island at a river mouth has been excavated but unfortunately most of the specific information is not available in published form. It has been commented that the village was palisaded and that longhouse-like structures were present (Smith and Prevec 2000:85). Faunal evidence suggest that the village was occupied on a year-round basis. The contact period Glen site on Flowerpot Island in Georgian Bay was a fall lake trout fishing locale where trout were caught during their spawning cycle (Wright 1981). The exceptionally large size range of the trout, some of which a colleague referred to as 'alligators', would suggest



BLACK AND WHITE PLATE LVIII: NORTHERN ALGONQUIAN SUMMER LODGE FRAMEWORK Both conical and domed lodges were used by Northern Algonquians throughout most of the Canadian Shield. The above framework, photographed in 1929 at Rupert House in southwestern Québec (Public Archives of Canada, Ottawa, PA 44225), would have been sheathed with birch bark stitched into sheets which could be removed and rolled up for use at the next camp leaving only the sapling superstructure of the dwelling. It would difficult, if not impossible, for an archaeologist to recognize such a structure, particularly in the thin, disturbed deposits of a multi-component site. Even the charcoal from the hearth in the foreground would generally be contaminated by the addition of earlier and later camp fire charcoal and could not be trusted for dating purposes. (Reproduced from Wright 1976:Plate 18)

capture by hand line fishing rather than gill net, the latter device tending to capture like-sized fish as controlled by net mesh size. Migrating water fowl were also common. The inland, protected location of this camp also points to an occupation during the inclement weather of the fall. The seamanship of Northern Algonquians is attested to by lake trout and whitefish fishing camps being situated as far as 8 km from land during a season characterized by violent fall storms. Small, summer hunt camps, including those on the tundra at the juncture of Hudson Bay and James Bay, have also been recorded (Tomenchuk and Irving 1974:45). It is likely, however, given the documented record of

BLACK AND WHITE PLATE LVIX: AN EXCEPTIONAL STRATIFIED NORTHERN ALGONQUIAN BASE CAMP SITE The Michipicoten site at the mouth of the river of the same name where it empties into Lake Superior, unlike the usual thin cultural deposits of the majority of Northern Algonquian base camp sites, was stratified by two sedimentary processes; wind deposition of sand off the lake shore fronting the site and water deposition of sand during high water stages, likely when spring runoff ice temporarily dammed the narrow River mouth. As a result the more than 600 year seasonal occupations of the site were stratified by intervening layers of sterile sand as is apparent in the photograph. Dr. George F. MacDonald, at just under 2 m in height, is standing at the summer water level and pointing to the major 15th century occupational stratum. A line of post moulds can be seen in crossection above his head. The illustrated bank cut area of the site was too deeply buried to be effectively excavated due to the danger of slumping. (Reproduced from Wright 1969:Plate I)

Northern Algonquian families establishing winter camp sites on the warmer frozen surfaces of creeks and lake inlets that relatively few demonstrable winter family camps will be located.

Features of any sort are generally rare and limited in variety on most Northern Algonquian sites. At the Michipicoten site on the northeast shore of Lake Superior, for example, pit and surface hearths composed of fire cracked rock, hearth floors demarcated by burnt sand, rare, small refuse pits, post moulds which formed no recognizable pattern, and deposits of red ochre were all that was recorded (Wright 1968). Like Lac Caniapicau in northern Québec, settlement on Lake Nipigon, Ontario was most intense during Period V with the majority of the sites being associated with rivers providing access to the hinterland. Sites also occurred on islands and in bays (Dawson 1976:Table 3). An absence of post moulds indicates the use of flimsy, albeit eminently practical structures. Larger sites were also generally associated with a good fishing locale.

Sites on the Lake of the Woods, at the juncture of Ontario, Manitoba, and Minnesota, have been correlated with stands of wild rice during both Period IV and Period V suggesting the importance of this plant even though direct evidence from said sites is lacking (Rajnovich 1984). Palynological evidence, derived from the analysis of the pollen in cores taken from lake sediments indicates that wild rice was available in the area beginning sometime between 600 and 100 BC (McAndrews 1969). The Spruce Point site on the Lake, a major warm weather base camp with only limited evidence of multiple occupations, was mainly occupied by people using Selkirk style pottery although some Blackduck style pottery was also present. On the basis of the distribution of hearths, pits, and cultural debris, two multi-family dwelling were hypothesized as being 6.4 by 4 m and 6 by 3.5 m, respectively (Rajnovich 1983:Figs.14 & 8). It was estimated that seven to eleven people occupied each dwelling. While local stone materials dominated exotic stone from 100 km to the north and northeast and from the west to the Winnipeg River was also noted.

At the Blackduck complex Stott site on the Assiniboine River in the Parkland vegetation province of southern Manitoba there was abundant evidence of bison hunting. Swan River chert, occurring in the local till, was the dominant stone used in tool manufacturing although Knife River chalcedony from North Dakota was also common (Hamilton 1982:Fig.10). In contrast, exotic stone materials appear to be totally absent during Period V from Southern Indian Lake in the Lichen Woodland vegetation province of northern Manitoba. Rather than bison, the northern settlement pattern reflects a focus on fishing and caribou hunting with fish being taken in the spring, summer and fall and caribou in the fall and early winter. Most sites were protected from northwest winds and situated on level, well-drained ground with convenient canoe landing beaches (Kelley 1982:116). The foregoing site situations in the southern and northern regions of Manitoba reflect the variability in settlement and subsistence to be found in Northern Algonquian culture. The Southern Indian Lake situation, however, is a far more common settlement pattern than that of the Stott site in southern Manitoba.

Cosmology:

Archaeological phenomena which can be attributed to Northern Algonquian belief systems regarding the cosmos and man's place in it are as follows: mortuary practices; certain artifacts; pictographs or rock paintings; petroglyphs or rock etchings; certain natural and cultural features and materials; the manner of disposal of animal bones; petroform features including Thunderbird pits and cobble configurations on flat bedrock; and dog and other animal burials. Each of these general categories will be considered individually starting in the east and advancing westward.

Mortuary Practices

Beothuk dead were sometimes placed in small caves in cliff faces. Bodies were wrapped in red ochre painted shrouds and provided with offerings. Unfortunately, most of these graves were looted by curio seekers in the19th and early 20th centuries. Other historically documented methods of burial were scaffold burial, burial in a wooden box of squared timbers, cairn burial, and earth burial. In all instances it appears that both the body and its container were wrapped and/or lined in birch bark (Howley 1915:213-214). It has been documented that Northern Algonquian peoples regarded the birch tree (*Betula papyrifera*), as well as the cedar tree (*Thuja occidentalis*), as being sacred. Both trees held paramount roles in Ojibwa legend relative to events surrounding the culture hero Winabojo and, indeed, offerings were made to the trees prior to bark removal (Densmore 1974:381-387). In addition to its use as burial shrouds, birch bark was used to make containers, sheath dwellings and canoes and a host of other functions. Among these other functions was as a wrapping to preserve food. It may be speculated that this preservative quality was also a consideration in the use of birch bark as a burial shroud. Cave, or more accurately, rock shelter burials have also been recorded in the cliffs of the Tadoussac area (Brassard 1961). These burials most likely pertain to a local Montagnais band. One burial cave contained only three human bones as well as single bones of caribou and martin and some worked cedar and birch bark. Another cave contained incomplete human remains and beaver, porcupine, red squirrel, hare, otter, marten, bird, fish, and shell fish remains. There were also numerous marine shell beads (*Marginella spp.*), cylindrical shell beads (*Busycon canaliculatum?*), shell disc beads, perforated seal teeth, bone awls, bird bone beads, worked bark and wood, and a tube manufactured from European copper. In yet another grave the only human remains were a tooth, three ribs and phalanges as well as some mammal and bird bones and cylindrical shell beads, bone awls, worked bark and wood and European iron nails. It is apparent that the Tadoussac cliff burials, unlike the Beothuk cliff burials, were temporary graves from which most of the remains were removed for final burial elsewhere. Cave burials have also been discovered on the limestone islands of Georgian Bay in Lake Huron where, in the one instance, a young child had been wrapped in a birch bark shroud (J. V. Wright: field notes).

Preservation of bone in the cave burials of the Newfoundland coast, the Tadoussac area of Québec, and islands in Georgian Bay is the exception to the rule as, in all instances, the burials were not only late in Period V but had been placed in an acid neutralizing limestone environment. Across the Shield the endemic acid soils have destroyed direct evidence of mortuary practices. While some of the large base camps have some bone remains due to the acid neutralizing effect of wood ash from the many camp fires there is no evidence that the dead were buried in such locales except for sites along the southern flanks of Shield. A major archaeological excavation adjacent to Ontario in Michigan took place at the Juntunen site on Bois Blanc Island where Lake Huron joins Lake Michigan (McPherron 1967). The mortuary practices of this site, dating to the 15th centuries, clearly relate it to that of Western Basin culture (Chapter 34) and, to a lesser extent, the Rainy River region of Ontario and Minnesota (Kenyon 1986). A13.7 by 7.6 m burial mound at the Juntunen site stood 0.6 m high and contained a number of multiple secondary pit burials: the largest of which contained 21 adults and 14 subadult bundle burials, some with articulated elements. There were also extended primary burials wrapped in bark and placed in a pit lined with bark. Brain removal, a hallmark of Western Basin culture mortuary practice was also in evidence. The removal of plaques from the skull, generally circular, is a trait of the earlier Hopwell Mortuary complex (Griffin et al. 1970) and during Period V obviously represents a survival of earlier ceremonial practices. Small pottery vessels, specifically made for placement with the deceased and called mortuary vessels, were among the offerings. One personal tool kit placed with the deceased included objects of ritual importance, such as an otter skull, which was probably part of a medicine bundle, a baculum or penis bone, and four dog legs lacking feet (McPherron 1967:209). A lower portion of one burial pit contained bundle burials covered by a layer a soil on top of which a number of partially articulated burials were placed indicating that the earlier interments had been clearly marked. Obviously, this feature provides evidence of sequential burial by a kin or clan group.

At the Long Sault site adjacent to the rapids of the same name on the north shore of the Rainy River, now preserved as a Ontario provincial park, a pattern of burial mound construction continued from Period IV into Period V, albeit with changes in mound construction details. The only archaeological excavation of these features in Ontario pertains to the Blackduck complex at the Hungry Hall site, also on the banks of the Rainy River (Kenyon 1986). Mound 1 at this site, partially eroded by the River, stood 1.2 m in height and was composed of village refuse. Along the edges of the mound a number of infant bodies wrapped in birch bark were recorded and as the excavations moved into the mound proper adult secondary burials, also wrapped in birch bark, were encountered. Small pottery mortuary vessels had been placed with the deceased. It was discovered that the mound covered a 2.4 m diameter grave pit which had been lined with birch bark. The mound had been constructed in two stages involving initially at 9.1 m diameter mound 0.8 m high containing multiple secondary burials, some of which were cut through by the large subsequent pit excavation. The pit contained considerable charcoal and ash in addition to a number of secondary burials which exhibited evidence of defleshing, brain removal, and clay masking of some of the faces. Obviously, the function of this mound through time was complex. Dated to the 12th century, the mound held numerous offerings to the deceased which included mortuary vessels, shell beads and gorgets (Olive, Natica, and Columella), soupstone tubular pipes or sucking tubes, scrapers, and projectile points, paintstones, and native copper beads. In addition, several antler picks were recovered which would represent discarded excavating tools. One adult body had an arrowhead imbedded in the lower back indicative of hostilities. Mound 2 at the same site and of the same age was 19.2 m in diameter and stood 0.76 m in height despite having been both eroded and dug into by curio seekers. The earthen mound covered a 2.4 m diameter, 1.8 m deep submound pit which had been covered with a layer of logs charred by fire. As the logs bent into the pit it indicates that the central burial pit was not filled with earth but was simply covered with logs which were partially burnt and then the mound was erected on top. Disarticulated human remains were encountered at the bottom of the pit with the skulls occurring in two clusters at opposite sides of the pit. This dual clustering of skulls must have had some social significance related perhaps to moiety burial rites or clans. Some of the skulls were not only masked with clay to substitute for the missing flesh but had inserted disc shell beads as eyes and likely an inserted nose of some perishable material. All of the skulls were heavily dusted with red ochre. There is some suggestions that the jaw bones were originally attached to the skulls. Brain removal was also evident. Parts of twenty people were involved although only the adults were masked with clay. Pottery mortuary vessels, bird bone and shell beads, catalinite sucking tubes, and a bone awl were among the grave offerings. All of the mortuary vessels would be attributed by some to a Bird Lake complex of extreme southwestern Ontario and adjacent Manitoba (Lenius and Olinyk 1990:Table 8.4 and Fig.8.12). One skull possessed evidence of scalping (Kenyon 1986:60), a further indication of hostilities. The continuation of burial mound internment into the contact period is evidenced by the Oak Point Island mound at the eastern end of Rainy Lake which, on the basis of the grave offerings, would date to the late 18th and early 19th centuries. The 12.2 m diameter and 1.2 m high mound lacked a submound pit and was described as "...an amorphous mass of earth with a surprisingly low artifact content, a number of large angular rocks (Pl.82), two burials, a number of scattered bones, and a rich assortment of grave furniture" (Kenyon 1986:66). The two identifiable burials consisted of a flexed adult woman and a child. A majority of the grave offerings were of European origin, although pottery mortuary vessels, a sucking tube, a stone scraper and knife, and a native copper awl were also present. This particular burial site represents a good example of the cultural persistence of mortuary practices which were more resistant to displacement by European influences than elements of technology and other aspects of culture. There is little doubt that the ceremonial mortuary tradition of burial mounds, skull and long bone modification, and traits like masking the skull with clay, which occur along the southern fringes of the Shield on some Northern Algonquian sites from the juncture of the upper Great Lakes into the Boundary Waters area of Ontario and Minnesota as well as on Western Basin culture mortuary sites in the Lake St.Clair region, represents a modified continuation of earlier Hopewell Mortuary Cult practices (Wright 1999:671-684).

A 9th century Blackduck complex burial at the Martin-Bird site in Ontario west of Lake Superior was encountered on top of a ridge along with a number of depressions interpreted as wild rice storage pits. An associated bundle burial appeared to be enclosed in a stitched birch bark shroud accompanied by a pottery vessel. Another Blackduck complex burial at the Bjorkland site on the Winnipeg River in Manitoba contained only a portion of the vertebral column and a forearm of a three to five year old child (Meiklejohn et al. 1994) suggesting that most of the remains had been removed for final burial elsewhere. Also present were five beaver ribs and rib fragments with drilled holes at one end which likely functioned as pendants or possible arm bands. It is speculated that such arm bands may have been specialized offerings intended only for child burials (Ibid:55).

Artifacts with inferred cosmological significance

The elaborate engraved bone and ivory pendants placed in Beothuk graves have attracted considerable attention (Marshall 1978). Occurring singly or in groups of 40 or more, the majority of the pendants possess a suspension hole at one end, are tapered, and stained with red ochre. Incised motifs are geometrical and symmetrical and tend to be oriented along the main axis of the pendant. Most pendants are flat with motifs appearing on both faces although there are a minor number of sculptured specimens. Lengths range from 2.5.0 to 16.9 cm with an average length of 6.9 cm. Regarding function, pendants have been found attached to ornamental hide fringes (Marshall 1978:141) suggesting they were possible amulets or charms. The pendants cannot be related to formal images without stretching one's credulity. It is speculated that they represented personal spirit helpers. The aforementioned function is supported by their individuality characterized by a lack of any general patterning. The fact that no two pendants are identical does not accord with Montagnais-Nascapi painted motifs on clothing which are distinctive to specific bands (Speck 1935:190-192). Speculation that they represent influence from the Late Palaeoeskimo (Dorset) is not convincing.

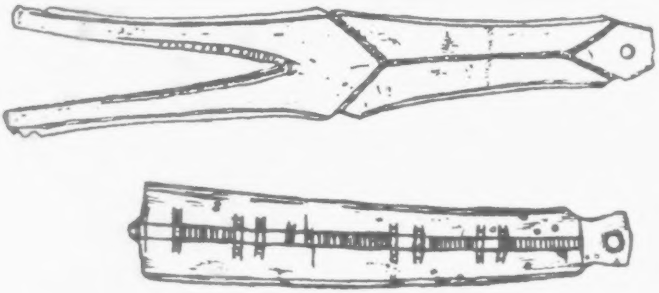


FIGURE 136: BEOTHUK PENDANTS The two pendants from the Island of Newfoundland illustrate the variability in form and motif typical of such objects which are speculated to represent ancestral spirit helpers. (Drawings by David W. Laverie. Scale variable)

The extensive use of European items in Beothuk graves suggests that a particular significance was attached to them (McLean 1994); a pattern duplicated by Iroquoian people where precontact grave offerings are either absent or scarce but with the availability of European manufactured goods such items as metal kettles, porcelain beads, and iron implements were lavished on the deceased. A Micmac man, upon being asked why perfectly good brass kettles were buried with the dead logically replied that such alien items were not available in the Indian Heaven and, therefore, they had to be provided for the use of the deceased kinsmen.

As a rule smoking pipes can be associated with ceremonialism involving the use of the sacred tobacco to create the hallucinative state necessary to communicate with supernatural powers. Some pipes are striking examples of this association with spiritualism. At a site on Lac Duparquet near the Québec-Ontario border a pipe bowl made from local soapstone was found in a test pit associated with red ochre fragments. It was surmised that "On peut croire que l'usage de la pipe, non seulement comme object domestique mais aussi comme object cérémonial liant les mondes matérial et spirituel..." (Côté 1999:98). It is speculated that the figure with the upraised arms on the pipe is soliciting the assistance of the Upper World whereas, in contrast, a figure with the arms down on the other side of the bowl may represent a solicitation of assistance from the Lower World (Rajnovich 1994:75-81). From the same site a number of conical and triangular shaped stone object have been speculatively attributed to the shamanic shaking tent ceremony associated with attaining visionary information (Côté 1999:99).

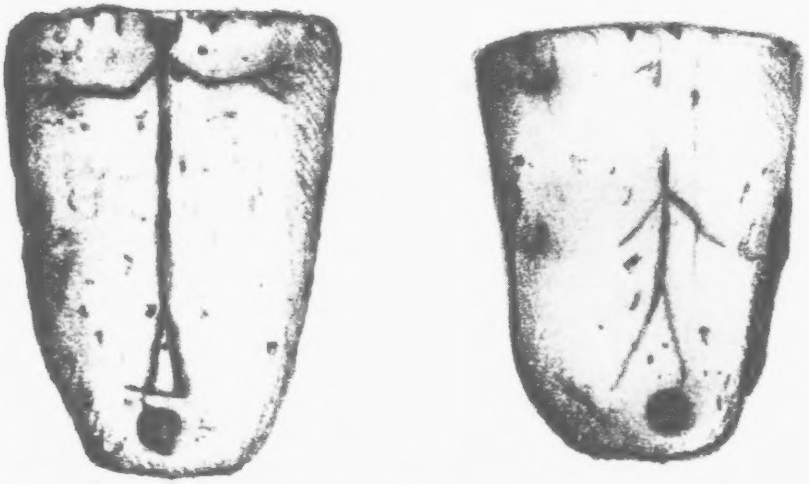


FIGURE 137: THE INKSETTER SITE PIPE, QUÉBEC This soapstone pipe with human images on both faces would have been smoked using a hollow wooden stem inserted through the drilled hole on one side (not shown). The small hole drilled through the bottom of the pipe would have attached the pipe bowl to the pipe stem with a cord to guard against accidental detachment and breakage. (Reproduced from Côté 1999: Recherches amérindiennes au québec, Vol.XXIX(3):Fig.3 with the permission of M. Marc Côté. Scale: the pipe is slightly more than 4 cm in height)

Another similar stone pipe from Lake Nipissing in Ontario at the La Vase Island site possesses a rectilinear etched design which is speculated to be a representation of a Midewiwin lodge. The Mide Society or the Society of Good Hearted Ones, was the major curing society of the Ojibwa (Robertson et al. 1997:21-23). A fragment of a Mide birch bark scroll, found accidentally near Quetico on the Ontario and Minnesota border, was dated to between AD 1410 and 1630, suggesting an early presence of the Ojibwa Grand Medicine Society (Kidd 1981).

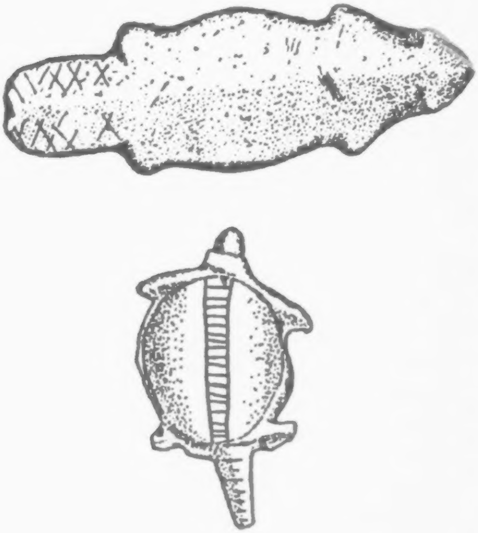


FIGURE 138: STONE AMULETS The strikingly realistic stone carving of a snapping turtle (*Chelydra serpentina*) was found in the Ottawa Valley upriver from Ottawa. Although occurring in Algonkin territory the Ottawa River Algonquin bands had close contacts with the Huron of Georgian Bay. In Iroquoian society the snapping turtle plays a critical role in the creation of the world. Algonquins held the turtle in particular reverence as a a symbol of earth and was addressed as "mother", a symbol of fertility and the earth. It is known that the Algonkins also shared many religious beliefs with their Iroquoian neighbours so the object could pertain to either group although, on the grounds of geographic probability, I would favour an Algonkin authorship. The exquisitely formed stone beaver from the contact period Ojibwa occupation of the Pic River site on the north shore of Lake Superior could possibly be a representation of a personal guardian spirit or of the Master Manitou of all beaver. Inferring the symbolic significance of such a rare object involves speculation but such speculations are essential in attempting to understand the humanity underlying such objects.

Pictographs (rock paintings)

Rock paintings occur as red pigment images painted on the vertical faces of cliffs where they enter a body of water. Such sites are generally situated in isolated locations. They are found most commonly in Ontario, Manitoba, and Saskatchewan but there are distant outliers in Québec (Arsenault et Gagnon 1998) and the Northwest Territories (Dewdney 1970:Fig.1). The distribution of paintings has undoubtedly been obscured by recent damming of waterways which have elevated water levels. In Québec two outliers are the Nisula site, located approximately 300 km down river from Québec City, and a site at Lac Nemiskau on the James Bay drainage (Arsenault et Gagnon 1998:Fig.1). The former site paintings have been dated using the MAS radiocarbon method applied to the organic binder in the paint and produced a date of 200 BC (Ibid:footnote 12). However, this early reading requires further confirmation. Most rock paintings, if not all, had a binding substance for the mineral pigments consisting of both animal and plant fats and oils such as bear fat or sunflower oil. It is worthy of note that the Nisula paintings have much in common iconographically with those recorded in Ontario and, in particular, the Bloodvein River site on the Manitoba border nearly 2,000 km away. Paintings depicting people with guns and riding horses indicate that the practice continued well into the European contact period. Their geographic distribution suggests that they were predominantly associated with the Algonkins, Ojibwa, and western Cree with a major core area in the southern portions of the Shield immediately adjacent to Minnesota and Michigan. The Nisula site, however, would suggest an association with the western Montagnais; either that or a wide-ranging western shaman. One of the northern-most grouping of rock paintings are found in the Southern Indian Lake region of the Churchill River drainage (Maurer and Whelan 1977:Fig.3; Steinbring et al. 1969); a region where the culture history of the local Cree band(s) has been elucidated (Dixon 1980; Wright 1971).

A detailed survey of the northern two-thirds of Lake Obabika, to the west of Lake Temagami on a drainage system which flowed into Lake Nipissing and eventually Georgian Bay, produced some interesting results as the pictograph sites were viewed in conjunction with habitation sites and other sacred sites (Conway and Conway 1989:Fig.1). In most instances the pictograph sites were isolated from camp grounds. Pictograph site symbolism on Lake Obabika are quite similar to those on adjacent Lake Temagami with their high instances of abstract forms followed in much lower frequencies by animals, humans, canoes, etc. The abstract symbols were mainly tally marks, horizontal lines, or dots (Ibid:Table 7). The Conway's were able through interviews with local elders to demonstrate that there is a living memory of the rock paintings and that they represented an important segment of "a spiritual bonding of the people to their homeland". They came to the conclusion that rock art ritualism was still being practised in the 19th century (Ibid:55). I can personally relate to the importance of these and other features associated with the supernatural having cruised Lake Temagami with an Algonkin elder who pointed out a crack in the bedrock on one side of the Lake to a corresponding crack on the opposite side of the Lake. He explained to me that the cracks were made by the Great Serpent who was attempting to escape his enemies The Thunderers. This and other observations made by the elder impressed upon me the fact that the entire territory was a single site in its own right.

COLOUR PLATE XXVIII: ROCK PAINTING ON THE NORTH SHORE OF LAKE SUPERIOR The illustration shows a portion of the paintings on a cliff near Agawa, Ontario. These specific images were reproduced on bark in the first half of the 19th century by an Ojibwa named Chingwauk. His explanation of the images was that the horned creature represents Misshipeshu, the Great Panther or Lynx, a supernatural being who was the King of the Fishes, while the serpents are representations of Mishikenahbik, the Snake Manitou. The canoe manned by five humans probably relates to a shaman called Myeengun (Wolf) who undertook a hazardous voyage on the Lake, probably in response to a vision. The remnant of black paint on the Great Panther is all that is left of a fisherman's daughter's initials which she painted over the figure in 1937. While the original paintings were protected by a naturally deposited layer of silica precipitated over time the recent commercial black paint had no so such protection from exposure to Lake Superior storms. (Reproduced from the cover of Wright 1976)

The rock painting phenomena is generally associated with shamanic ceremonies although it could also have served multiple cosmological purposes and even political ones, such as acting as territorial markers. As indicated by oral tradition and the iconography of the sacred bark scrolls of the Mide, the paintings are directly associated with Algonquian cosmology (Dewdney 1975; Dewdney and Kidd 1962; Vastokas and Vastokas 1973). Painted images are 50% or more abstract with the other categories consisting of man-made objects, such as canoes; hand impressions and other human forms or portions thereof; mythological creatures; animals and birds. Panels on cliffs are a mix of standardized forms and what are probably representations of personal experiences and, thus in a sense, are records of power acquisition for future generations. Grace Rajnovich has done a particularly fine job of delving into the possible cosmological associations of the paintings (1994), such as equating the association of cliffs with the powerful Manitou's who resided therein, attributing their locations adjacent to water as that is where the elements of Algonquian cosmology meet at the interface of earth and sky on an axis bridged by the sacred cedar tree, and the predominant use of the colour red which was a powerful medicine in its own right.

Petroglyphs (rock etchings)

In contrast to rock paintings rock etchings are scarce both within and immediately adjacent to the Shield. The most famous site is the Peterborough Petroglyph site, now a provincial park east of the City of Peterborough, Ontario (Vastokas and Vastokas 1973). As noted in Chapter 31, there are iconographic reasons for assigning this site to the 17th century Abenaki rather than the Northern Algonkians. Also, in contrast to the physical setting of the rock paintings, rock etchings generally occur on the surface of relatively flat rock outcrops or boulders. Abstract etched images on three glacial erratics were recorded at Rock Lake in Algonkian Provincial Park in eastern Ontario (Noble

1968:Fig.5). The symbols, specifically on Rock 3, do resemble some of the abstract symbols found at pictograph sites (Dewdney and Kidd 1962:42). The Mud Portage site on Lake of the Woods was exceptional in that the etchings were overlayed by archaeological debris (Steinbring 1990). Some of this debris pertained to Middle Plains culture (Oxbow-McKean) of Period III and could date as early as 3,000 BC. The distinctive style of the etchings exhibits some similarities to sites in Wisconsin and Minnesota. However, correlation between the etchings and the age of the archaeological deposits at the Mud Portage site is not entirely clear. Other petroglyphs in the Boundary Waters area between Ontario and Minnesota have been confirmed (Dewdney and Kidd 1962:index). Factors likely bearing on the apparent scarcity of rock etchings are their isolated locations, their indistinctness except under certain lightening conditions or wettings, and occurring on horizontal bed rock outcrops where the possibility exists of the etching being obscured by organic materials.

Natural and cultural features and materials

This category includes a number of quite different phenomenon. For example, it has been speculated that the elongated hearths of Newfoundland and Labrador associated with caribou bone mash may pertain to the mokoshans ceremony of the Montagnais intended to honour the caribou (Holly 1998:25; Loring 1997:209-210). Among most, if not all, Algonquian people failure to perform a feast to honour the Animal Master after a successful hunt was one of the major reasons for illness and other misfortunes. The importance of Ramah quartzite from northern Labrador to the eastern Montagnais bands has, in part, been related to the stone's symbolic significance (Loring 1997; McCaffrey 1989:106). For example, the Labrador Inuit name for Ramah quartzite is 'tunuyak' after its resemblance to caribou back-fat. Similarly, the eastern Cree name for the widely distributed Mistassini quartzite of north-central Québec is 'wenopsk' or "stones that look like fat" (Martijn and Rogers 1969:195). As fat, in relative terms, was more important than meat, its association with the stone used to kill and butcher the caribou would natural have been of symbolic importance. It is particularly interesting that two totally unrelated peoples, the Inuit and the Indians, possessed the same concept unless, of course, the Inuit, as new comers to the Labrador coast, simply translated an earlier Indian name for the material. The symbolic significance of particular stone materials is a trait characteristic of many cultures throughout the country from earliest times.

A striking natural feature is La Colline Blanche on the Temiscamie River which drains into lakes Albanel and Mistassini in north-central Québec. The hill consists of a quartzite anticline with forty-seven cavities along the cliff face which range from 0.9 m in diameter to large caverns eroded by glacio-fluvial and frost action. The Antre de Marbre is the largest of these natural cavities and is believed to be the one described in

AD 1731 by the Jesuit Father Pierre Laure who commented that it was a sacred site where shamans communicated with the spirits and was called 'Tchichemanitou ouitchchouap' or the House of the Great Spirit (JR LXVIII:49). Detailed recent descriptions of the cave are available (Hamelin et Dumont 1964; Martijn and Rogers 1969). Despite a main chamber 3.7 m in diameter and 2.7 m high there is no evidence of human occupation even though an archaeological site is located nearby. This in itself suggests that the cave was just used for ritual purposes by shamans and was avoided by most people as a place of both sanctity and dangerous power. As with rock art sites, such locales as the Antre de Marbre were sacred places imbued with supernatural power situated in isolated locations which will require a special type of archaeological reconnaissance as well as some appreciation of Northern Algonquian shamanic practices to locate (Arsenault 1998; Molyneaux 1983). On Lake Obabika to the west of Lake Timagami two large freestanding rocks are interpreted as "My Grandfather and My Grandmother rocks" and were provided with offering by passing travellers. Interestingly the rock feature is in close proximity to a pictograph site (Conway and Conway 1989:Fig.20). I can strongly recommend as both a reconnaissance technique and a learning experience getting into a boat with a local elder and simply listening; you are the student and he is the teacher.

Disposal of animal food remains

To the Northern Algonquians, like all people whose existence depended upon hunting, the animals upon which they relied for sustenance, hides-furs, antler, and other essential products, were sacred and had to be treated with respect or they could withhold their bodies from the disrespectful hunter. Though on most sites in the Shield where acid soils quickly dissolve all bone, in some circumstances faunal remains survive. An innovative study of a modern 1977 Cree winter camp in Québec, which had been occupied for three months by two brothers and their families, examined how animal remains were discarded. The resulting distribution of remains indicated symbolic disposal related to the animal spirits (Gordon 1980). This study indicates the persistence of traditional religious practices whereby animal bones are sacred and must be treated with respect. Not all animal spirits were of equal importance, however, such as that of bears versus squirrels. In a majority of instances only carbonised bone fragments survive but even these possibly reflect symbolic treatment, such as whether the bones of certain species or their manner of capture were placed in a fire. Faunal analysts are increasingly taking symbolic treatment of bone remains into consideration. For example, in northern Québec and adjacent Labrador when the calcined bone from the hearths in the dwellings can be identified it is most often caribou suggesting a special relationship between caribou and fire. Point Revenge complex stone tools destroyed in the same hearths at the Tikkoatokak site and other sites along the Labrador coast have been inferred to relate to a ritual honouring of the animals (Loring 1989:61-62).

Petroforms

Petroforms refer to a range of artificial stone arrangements. Such arrangements consist of the so-called Thunderbird or Puckasaw vision pits and associated cairns found across the Shield in Ontario and Manitoba and the distinctive geometric and animals forms of southeastern Manitoba created by arranging cobbles on exposed flat bedrock surfaces.

Thunderbird pits and cairns extend from southeastern Manitoba east to Lake of the Woods and Lake Nipigon, along the north shore of Lake Superior, and onto the islands of Georgian Bay (Carmichael 1981; Dawson 1981a; Wright 1981). They are usually situated on boulder beaches where a pit can be constructed by removing boulders and cobbles from a central area and arranging them around the periphery to form walls. A related phenomena is found further east in Algonkin Park in Ontario consisting of circular and rectangular dug pits lined with cobbles behind which, at a higher elevation, numerous stone cairns occur (Noble 1968). In a majority of cases the pits overlook water although I was once taken to one some distance up the Pay Platt River by an Ojibwa elder. Elevated strandline dating along the north shores of Lake Superior and Lake Huron suggest considerable time depth for these features. For example, the aforementioned Pay Platt feature may not have been isolated upriver but, rather, pertained to an earlier time period when Lake levels were much higher. There is evidence that the pits can date from Period IV right into the contact period (Wright 1999:771). Generally such pits occur as concentrations isolated from areas of human occupation but, as is so often the case, there are exceptions. The Thunderbird site in southeastern Manitoba, for example, was associated with a site occupation (Carmichael 1981) whereas at Algonkin Provincial Park the habitation site was on the opposite side of the Lake from the pits and cairns (Kidd 1948). Very little if any cultural debris is associated with these features. It is inferred that the pits, of various forms but generally circular, and their associated (commemorative?) cairns relate to a number of ceremonial functions but mainly to the vision quest whereby a young person seeks isolation and exposure to the elements in order to eventually dream of a spirit who then becomes a personal guardian throughout the rest of the individual's life. Indeed, I acquired a guardian spirit myself during work on the stone features of Red Sucker Point on the north shore of Lake Superior. When I described my dream to an Ojibwa acquaintance he asked for the details and when I told him that my vision involved a human-sized flying squirrel which saved me from falling off a cliff into the Lake, he simply stated "That is good". Pit features can occur in large numbers and, as noted, on different elevated strandlines, particularly along the north shore of Lake Superior (Dawson 1981a) but they can also occur as isolated single features. For example, a pit 2 m in diameter and 0.5 m deep, composed on angular rock resting on bedrock and associated with a cairn, was discovered on Fox Island at the mouth of the Mississagi River on Georgian Bay (Brizinski 1975:56-57).

Animals, including humans, and geometric petroforms found in southeastern Manitoba are quite distinct from the foregoing vision pit petroforms. Consisting of arrangements of cobbles on a flat bedrock surface (Steinbring 1970;1980) they are usually situated on high land, isolated from any resources, including water. Orientations of the linear and elliptical arrangements have been speculated to relate to ceremonies involving celestial bodies (Buchner 1980). It has further been speculated that at least one of the Manitoba petroform sites is associated with a Late Western Shield culture (Laurel) habitation site (Steinbring 1976) although the site in question has also produced Middle Plains culture materials (Oxbow complex) which leaves dating of the petroforms still in question. Cultural continuity from the local Late Western Shield culture into the contact period would favour an Algonquian authorship for the features (Danziger and Callaghan 1983). Given the restricted distribution of animal and geometric petroforms in Manitoba (Ibid:Fig.3) and despite certain differences between petroforms on the Plains and those in the Shield, it is suspicioned that the southeastern Manitoba structures were the product of Plains influences. Whether they pertain to Period III, when that area of Manitoba was occupied by Plains cultures, or to Period V and Northern Algonquian culture is still an issue seeking resolution. Further east in Ontario a few very large geometric petroform features measuring 60 by 15 m and associated with Thunderbird pits have been speculated to pertain to the Mide Lodge ceremonies of the Grand Medicine Society of the Ojibwa (Dawson 1981a:305-306). The features certainly appear to be distinct from the one's in southeastern Manitoba.

Animal burials

The most common animal burials associated with Northern Algonquian culture sites are dog burials, many of which represent the burial of the remains of a ceremonial dog feast. Of course, only those sites with bone preservation will produce such evidence and therefore they are a rarely identified across the Shield with its normal acid soils. There were regional differences whereby the Montagnais apparently abhorred the practice of sacrificing dogs. In the AD 1000 level of the stratified Frank Bay site on Lake Nipissing, Ontario six bundle burials of young dogs were encountered as separate burials but all compacted into a tightly restricted area (Brizinski and Savage 1983). During the initial excavation of the site three additional dog burials were recorded (Ridley 1954:49). The application of the Direct Historical Approach to this site clearly relates to a local Northern Algonquian culture development which led to the contact period Nipissings. The dog remains were dismembered but not burnt and there was some evidence that the remains had been encased in birch bark. There was also evidence of butchering and that the animals throats had been slit and their remains buried in association with a cooking hearth (Brizinski and Savage 1983:38). In several instances, red ochre was associated and in another a worked quartz crystal had been placed with the dog. Charred beaver and muskrat bones surrounded the dog burials. Juvenile dog burials were also common at the 16th to early 17th century Odawa site at Providence Bay on Manitoulin Island while scattered dog remains in the refuse deposits were scarce. The dog burials occurred in two discrete clusters and, like the Frank Bay site, there was evidence that their throats had been slit. One of the clusters consisting of three dog burials was associated with the burial of the partial remains of two eagles. The other cluster of five dogs was associated with three beaver and a loon burial. (Smith and Prevec 2000; Beverley A. Smith, Michigan State University: personal communication). Whitefish Island, at the juncture of the upper Great Lakes, produced seven dog burials including one juvenile and an articulated individual. Also found at this site were two articulated bear feet and in another instance a single articulated bear foot (Conway 1977:Table 15). Although bone was poorly preserved at the Michipicoten site on the northeast shore of Lake Superior, one definite dog bundle burial was recorded and the fragmentary evidence of another possible three dog burials. All of the burials were from the mid-15th century stratum of the site and some articulation was noted relative to the definite bundle burial (Wright 1968:8).

External relationships:

"It ought to be remembered that these savages have a natural right to this island and every invasion of a natural right is a violation of the principle of justice." (From a letter by John Bland of Bonavista Bay, Newfoundland to the Governor's Secretary in 1790 deploring relationships between the Beothuk and the Europeans. Howley 1915:58).

"Undeceive yourselves. I am born free & independent. I despise those tokens of Slavery. I am not a Slave to wear any clothing. My old clothes satisfy me; & when they are worn out, I know how to procure others. You are all afraid of me, & you think with sweet words, & all this flummery to bribe me, to purchase a quiet you are too cowardly to procure & too base to deserve. You complain of troubles & dangers - who asked you to come here. If we want anything we will go to where it is to be had...If you will persist to trade here, trade fairly as men, & not wait till you think us too far drunk to perceive how you steal from us & insult our females...This is the reason we ill treat you; we don't kill you because it would be polluting our knives" (An Ojibwa man's response to a white trader's complaints - Nelson 1802-1804:44).

The preceding quotations reflect, first, a rare European attitude and, second, an undoubtedly more common native reaction regarding their dealings with Europeans. For a concise statement on a history of these relationships see Miller (1991).

Documentation on the Beothuk state that they were on friendly relations with their Montagnais-Nascapi neighbours to the north but were at odds with everyone else (Jukes

1842:131). Shanawdithit, a Beothuk woman, referred to the Labrador Indians as 'good people' (Ibid:129) and it is very likely that the Beothuk eventually sought refuge with the Montagnais of the north shore of the Gulf of St.Lawrence (Martijn 1990:236-237). As has been astutely pointed out, a highly mobile group like the Beothuk, with obvious sophisticated maritime skills, would hardly have stayed on the Island of Newfoundland to face extinction when they simply had to cross the narrow Strait of Belle Isle between the Island and Labrador to be among friendly Montagnais communities (Renouf 1999a; Renouf et al. 2000; Robbins 1989) with whom they had close pre-European ties. The preceding assumption that not all of the Beothuk became extinct but that an unknown number were simply absorbed into Labrador and north shore of Gulf of St.Lawrence Montagnais communities is strengthened by the occurrences of northern Labrador Ramah quartzite on Newfoundland Beothuk sites (Martijn 1990:228) and Newfoundland cherts on north shore of the Gulf of St.Lawrence Montagnais sites (Pintal 1992). Despite the fact that initial Beothuk contacts with Europeans were friendly this situation rapidly deteriorated. Late 16th century Basque records from the Strait of Belle Isle region, for example, refer to hostile 'esquimaos' but friendly 'montañeses' (Montagnais) and 'canaleses', the latter probably being Beothuk (Martijn 1990:230). For a succinct summary of the relationships between the Beothuk and the neighbouring Micmac, Montagnais, and Inuit as recorded by the Europeans see Martijn (1996). Certain myths in the European documents have until recently been uncritically perpetuated, such as the story that the French paid the Micmac for Beothuk scalps, a story which far more likely owes its existence to English propaganda (Martijn 1996). There is also the oral tradition of 400 Beothuk being slaughtered by European fisherman at Bloody Point near Hant's Harbour (Howley 1915:269); a purported event which begs the questions what were approximately eight bands of Beothuk doing together, how did they get themselves trapped on an isolated rocky point, where were the approximately 100 canoes needed to transport such a body of people, and what kind of weapons of mass slaughter did early European fishermen have at their disposal? Hostilities certainly existed but on a far less massive scale than the preceding myth which has undoubtedly been embellished over many generations of story telling. One of the reasons given for the location of the AD 1650-1720 Boyd's Cove site in Notre Dame Bay is that it was a 'safe' base from which to scavenge seasonally abandoned European fishing stations (Pastore 1986:218). The presence of glass trade beads and Normandy stoneware from this site may reflect peaceful contacts with either the French or their Montagnais allies.

The issue of whether the proto-Beothuk were contemporaries for a period with the Palaeo-Eskimo Dorset has, in the past, been largely based upon radiocarbon dates and inferences regarding technology transfers. For example, it has been proposed that the Beothuk toggling harpoon was based upon Late Palaeo-Eskimo Dorset prototypes (Jenness 1929; Tuck 1976:69). Engraved Beothuk bone and ivory pendants have also been attributed to Dorset influences (Fitzhugh 1985; Marshall 1978). In both instances, the evidence from the Beothuk side of the comparison is simply too weak to be convincing. A side-notched arrowhead associated with a 11th century Norse longhouse in northern Newfoundland, identified as being Dorset (Ingstad 1977:Fig.8), actually compares more closely with Beothuk-Montagnais arrowheads and would be indicative of early Norse and Indian contact. Radiocarbon evidence has been used to support the proposal of a contemporary occupation of the Island of Newfoundland by the Beothuk and the Dorset. Not only do problems exist regarding the accuracy of the cultural assignments of radiocarbon samples from many sites, such as L'Anse aux Meadows (Ingstad 1977) and Beaches (Carignan 1975), but radiocarbon is a dull tool when attempting to support precise chronological relationships. For example, the limited number of Dorset dates which post-date AD 500 range from 805 to 1490 BP (Morlan1999) with an average of 1338 BP or a calibration mid-point of AD 700. Seven of these dates come from questionable cultural contexts at the L'Anse aux Meadows site. Another three dates come from the Fleur de Lys soapstone quarry site on the east coast of Newfoundland. In contrast, of the 57 radiocarbon calibrated dates from Dorset occupations in the Port au Choix area with good cultural contexts only five post-date AD 500. Where stratigraphic situations exist the Northern Algonquian occupations are always above the Dorset occupations. The foregoing is not intended to deny Dorset-Beothuk contemporaneity on the Island of Newfoundland but simply to caution that it occurrence must have been short-lived. There is still no convincing evidence of technological transfers between the Dorset to the Beothuk even though both people followed similar lifeways and faced similar transportation, hunting, and maritime challenges. Recent work at Port au Choix has produced the first convincing evidence of proto-Beothuk and Dorset contemporaneity (Renouf et al.2000:113-114). This evidence came from the Gould site at Port au Choix, a Northern Algonquian site containing a subterranean house floor containing predominantly proto-Beothuk artifacts but in excellent association with Dorset tools. It has been further speculated that there was a degree of mutual support between the two populations based, in part, on Beothuk exploitation of caribou and Dorset reliance upon seal. Such mutualism between unrelated people are known to have existed, such as between the Huron and the Algonkin, and in the Beothuk/Dorest instance would have had the advantage of reducing risk in a region characterized by periodic resource unavailability whether it be caribou or seal. Settlements of the two groups are also in close proximity to one another albeit with the Beothuk situated in more interior settings. Such a relationship would also explain the narrow overlap in radiocarbon dates. Contemporaneity of the two populations, however, must have short. A warming climate progressively worked against the way of life of the Dorset and they would have been forced to retreat northward into southern Labrador (Renouf 1999:49;1999a). It is also probable that an increasing presence of the ancestors of the Beothuk placed additional pressure on the already stressed Dorset communities.

The Northern Algonquian Point Revenge complex of Labrador during Period V had the potential for culture contacts with Late Palaeo-Eskimos, recent Inuit, and Europeans, including 11th century encounters with Norsemen from Greenland. With reference to the latter, "A possible Ramah chert point of Pointe Revenge style (*was*) found at the Norse graveyard at Sandnes, West Greenland..." (Fitzhugh 1978:171). Further, "Evidence of Late Dorset and Point Revenge contact is suggested by scatterings of isolated Point Revenge projectile points between Hebron and Ramah Bay and their recovery in a Late Dorset house at Saglik..." (Loring 1983:44). As the Ramah quartzite deposits of northern Labrador were likely under the control of Late Palaeo-Eskimo people into the 11th century there must have been either an exchange agreement or some other arrangement to allow Northern Algonquians access to the quarries. Periodic northern acquisition voyages by the latter in strength to the deposits is another possibility. If the latter, it would have left a very ephemeral archaeological record. Access to the quarries by Northern Algonquians only appears to have been completely severed by the intrusion of the 15th to 16th century Inuit onto the Labrador coast. If some formal agreement had existed it could have been based upon a trade in caribou skins and caribou products for Ramah quartzite as the Dorset people did not have ready access to the caribou of the interior plateau. For example, archaeological evidence of a Dorset presence at Indian House Lake in the Québec interior is lacking (Samson 1978:204). The Montagnais requirement of caribou fat for pemmican production and a fat-based soup resulted in overkills of animals that would have produced a surplus of hides as well as meat. However, archaeological evidence of the Montagnais (Innu) permanently leaving the Labrador coast for the interior does not become common until the Inuit and the Europeans asserted control of the coastline (Loring 1997:203). Ethnographic evidence of Inuit and Northern Algonquian cultural exchanges is both limited and late (Rogers 1964).

On Saddle Island in Red Bay, southern Labrador, a typical Point Revenge assemblage was found associated with hearth floors and European materials of the contemporary 16th century Basque whaler occupation (Tuck 1989:217). The presence of harp seal remains would suggest that the Montagnais were scavenging the Basque whaling station in the winter when the whalers had left for the season. At the same site a St.Lawrence Iroquois style pottery rim sherd was recovered on the floor and beneath the roof fall of a 16th century Basque building (Tuck 1985:Fig.7). The vessel was poorly fired and fissile in paste structure and, as suggested in Chapter 32, was more likely of Algonquian origin than Iroquoian despite general motif and form characteristics.

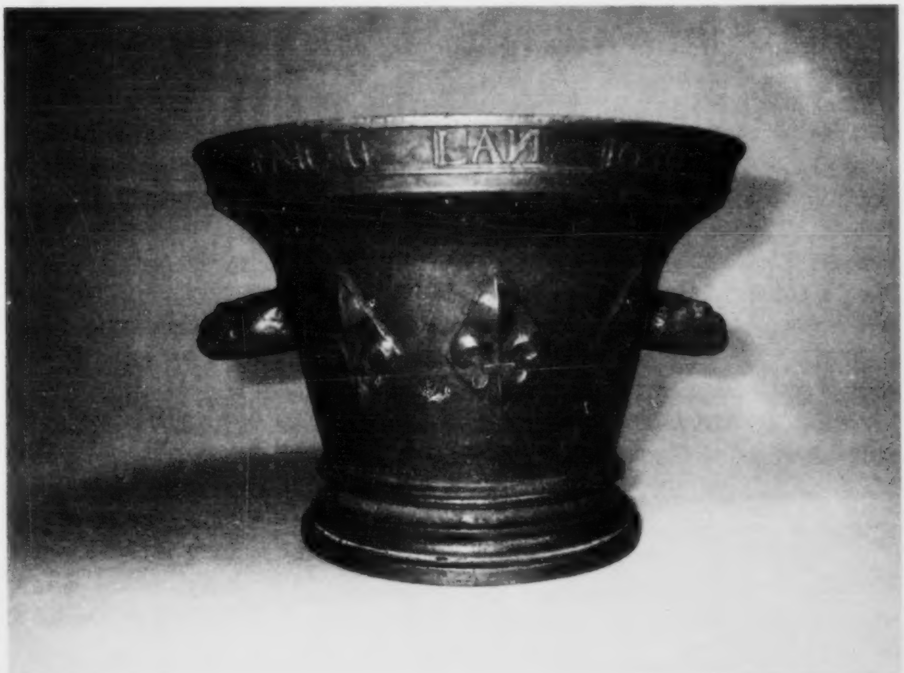
The majority of the so-called Iroquoian sites below Québec City were likely of Northern Algonquian authorship. For example, while the easternmost St.Lawrence Iroquois did have a maritime adaptation which permitted seasonal forays as far as the

Atlantic the frontier between them and the Algonquians appears to have been in the Québec City area. As this issue of ethnicity was addressed in some detail in Chapter 32 it will not be repeated here in detail except to note that at the Chicoutimi site, where the pottery is attributed to the St.Lawrence Iroquois, the major occupation is regarded as being Montagnais (Chapdelaine 1984a:164). The possibility that the vessels in question were Montagnais copies of St.Lawrence Iroquoian (and Ontario Iroquois styles) is considered as an alternative hypothesis given that the vessels all appear to have been manufactured from the local clays (Ibid:112). There is little doubt that the Saugenay River where it joined the St.Lawrence River was a multi-cultural, cosmopolitan meeting place. In fact, the precontact archaeological evidence clearly reflects the circumstances noted in AD 1603 by the French of an Algonquin, Montagnais, and Etchemins (Maliseet) gathering to celebrate a victory over one of the New York Iroquois tribes (Day and Trigger 1978:793). Relative to the latter group, some typical Maritime Algonquian pottery vessels have been found in the Lac St.Jean region (Moreau et al. 1991:58; 1995).

Jacques Cartier's early 16th century observation that all of the St.Lawrence Iroquois villages were located on the north side of the St.Lawrence River supports the documentation of hostilities with people to the south of the River and, conversely, that relations were more friendly with Northern Algonquians to the north and along the north shore of the Gulf of St.Lawrence. In contrast to the frequent adoption of St.Lawrence Iroquois pottery styles to the east of Québec City by Northern Algonquians such pottery is very rare on Ottawa Valley Algonquian sites where Ontario Iroquois (Huron) pottery styles dominate despite the fact that contemporary St.Lawrence Iroquois villages were situated only 70 km to the south. This situation has led to the suggestion that the Ottawa Valley was not occupied during the 16th century and thus influences from the St.Lawrence Iroquois villages could not be expected (Pendergast 1999). However, the Ontario Iroquois pottery styles common in the Ottawa Valley date to the 15th and 16th centuries thus making the Algonquian sites in the valley contemporary with the St.Lawrence Iroquois villages. Further, the suggestion that the Onontchatataronon of the mid-17th century, who occupied rivers draining from the south into the Ottawa River, consisted of assimilated St.Lawrence Iroquois refugees is based upon weak circumstantial evidence. An alternative hypothesis would be that when the St.Lawrence Iroquois moved out of northern New York into eastern Ontario in the mid-15th century they initiated hostilities with the Huron villages along the north shore of Lake Ontario, who had fishing camps only 100 km to the west. If the Algonkins of the Ottawa Valley were allied with one or more of the five Huron tribes, specifically those south of Huronia proper, then they would have been hostile to the nearby St.Lawrence Iroquois. However, why more St.Lawrence Iroquois pottery resulting from captive St.Lawrence Iroquois women does not appear on the Ottawa River sites but is so abundant on the southern Huron villages weakens such a suggestion.

Throughout the Canadian Shield, particularly west of Québec, the use of pottery to identify various levels of ethnicity has resulted in considerable disagreement. Blackduck pottery, for example, was initially attributed to the Siouan-speaking Assiniboine but now is generally accepted as pertaining to bands of the western Ojibwa. Meanwhile the eastern Ojibwa pottery styles were predominantly those shared their Algonkin and Ontario Iroquois (Huron-Tionnontaté) neighbours. In many respects, pottery styles are potentially treacherous ethnic identifiers and must be used with considerable caution. For example, Northern Algonquian sites from western Québec to Manitoba and adjacent Saskatchewan, excluding the more northerly regions of the last two provinces, are characterized by the presence of more than one pottery tradition. The problem thus presents itself regarding what frequency of Blackduck pottery is required for a site to be classified as western Ojibwa relative to a significant percentage of Selkirk pottery, generally attributed to the western Cree, from the same site? Thus interpretations based upon poorly stratified sites, like the Long Sault site on the Rainy River, that people of southern origins using Blackduck pottery withdrew to the west to be replaced by people from the north using Selkirk pottery (Arthurs 1986:205) need to be treated with some scepticism. The exceptional mobility of kin-related people (Dawson 1982) and, in particular, the women who manufactured the pots appears to have resulted in a complex melange of different pottery traditions on sites across much of the Shield. Such mixtures of pottery traditions are more a reflection of relationships between various bands than of ethnicity per se. Indeed, early European documentation of different native groups living together in the same villages is clearly reflected in the pottery tradition amalgams of the precontact and early contact periods. Such relationships were not restricted only to elements of the Northern Algonquian peoples but also included other adjacent Algonquian-speakers and Siouan-speakers. The problem of attaching ethnicity to pot sherds was addressed in Chapter 32 relative to whether contemporary sites above and below Québec City were Iroquoian or Algonquian or an amalgam of the two. The issue will be similarly addressed in what follows because all too often major population movements and replacements have been premised solely upon pottery styles despite the fact that the remaining technology and general life-ways remain remarkably constant. Exceptional cultural fluidity is a hallmark of Northern Algonquian archaeology and ethnic labels cannot be applied with the same degree of conviction as they can to adjacent Iroquoian societies who functioned at a tribal level of social organization and lived in permanent villages. It should not be construed from the foregoing, however, that the contribution of pottery styles to human relationships throughout the Shield should be given short shrift. To the contrary, pottery styles are an invaluable contributor to a better understanding of Northern Algonquian peoples but, like other facets of archaeological evidence, should be applied critically and in conjunction with other data such the finger-printed of exotic stone items indicative of community interrelationships across the enormous expanses of the Canadian Shield.

The Frank Bay site on Lake Nipissing, Ontario (Ridley 1954) consisted of a stratified sequence of occupations which spanned more than 2,500 years. An early 17th century Nipissing occupation represented the last of the components but exhibited clear cultural connections with preceding occupations. Pottery sequences were dominated by Ontario Iroquois styles from approximately the 10th century on. Associated with the latter pottery tradition, however, were at least three other pottery traditions representative of core developments to the south and the west and northwest; namely, Western Basin, Peninsular Woodland, and Blackduck. Not all sites have the same degree of pottery tradition mixtures with such variations likely reflecting the extent of relationships between different communities through time. North of Lake Nipissing at Lake Abitibi, for example, in addition to the predominant Ontario Iroquois styles were examples of Western Basin-like pottery (Marois et Gauthier 1989:Planche V; Ridley 1966:Fig.13).



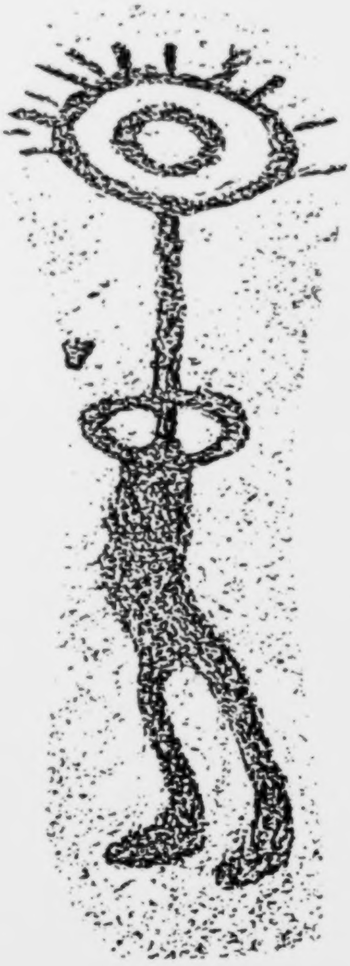
BLACK AND WHITE PLATE LX: A FRENCH BRONZE MORTAR Cast in France in AD 1636 this unique 16.3 kg bronze mortar was found in 1870 adjacent to a river east of Lake Huron's Georgian Bay. It has been attributed to one of the transitory Jesuit forest missions to the Algonkians who preached Christianity without the benefit of permanent mission sites. How the mortar came to its isolated location and why it exhibits much heavier use than would be expected of an implement whose primary function was to prepare herbal medicines are unknown. (Access to the mortar courtesy of the Beatty family - past and present, and digital photograph and information kindly provided by Mr. William A. Allen of Burk's Falls, Ontario)

The Michipicoten site where the Michipicoten River empties into Lake Superior, contained a series of occupations beginning in the 12th century and ending with strata containing European trade items (Wright 1969). An earlier excavation of the same site called it the Lake Superior site (Ridley 1961a); a too inclusive a designation to be perpetuated here. Throughout most of the more than 600 years of occupation two pottery traditions dominated, Peninsular Woodland and Western Basin, with another category called "Stamped" either related to the Western Basin tradition or a product of local stimulus diffusion. Stone materials from the site area have been judgmentally related to quarry sources mainly situated at the juncture of the Upper Great Lakes (Brizinski and Buchanan 1977:Map 5). Beginning in the mid-15th century a significant intrusion of Ontario Iroquois related pottery appears and maintains a major presence into the contact period (Wright 1969:Fig.6). The aforementioned pottery is typical of both Algonkin and eastern Ojibwa sites and its sudden appearance at Michipicoten indicates a significant increase in interaction with the east. Matters, however, are rarely that cut and dried when it comes to pottery tradition distributions across the Shield. Earlier Ontario Iroquois styles have been dated to the 10th century at the Pic River site to the west (Wright 1966a) and on Lake Nipigon (Dawson 1976). Clearly, different community interrelationships have resulted in a mosaic of mixtures of pottery traditions across different areas of the expanses of the Shield. In a stratum of the Michipicoten site containing European items a catalinite pipe, manufactured in a Plains style, was recovered (Ridley 1961a:Fig.4p) but, in contrast, an eastern Micmac style stone pipe was also recovered from a stratum producing European items (Wright 1969:Plate IV, fig.11). The Peninsular Woodland pottery, with a core concentration area at the juncture of the Upper Great Lakes, has been attributed to the Potowatomi (Mason 1986:217; Quimby 1966a:33) while the Western Basin-related pottery styles appear to be associated with a number of southern Algonquian groups. In the case of equating the Peninsular Woodland pottery with the Potowatomi, however, it has been wisely cautioned that, given intertribal marriages and the French documentation of villages being occupied by a number of different cultural groups, any one-to-one relationship between the pottery and ethnicity is simplistic (Mason 1986:218). Though it has been speculated that the Potowatomis were forced from their original homeland in the Lower Peninsula of Michigan by elements of the Iroquoian Neutral Confederacy and their allies in the mid-17th century (Mason 1986:15) the pottery tradition attributed to them appears on many precontact sites in the region around the juncture of the Upper Great Lakes (Wright 1968) suggesting that the Potowatomis had not only a more northerly distribution but also a close relationship over a considerable time period with their linguistically and culturally related Ojibwa neighbours. Examples of Western Basin-like pottery, with a core area in the same general juncture of the Upper Great Lakes, have even been found west of Lac Seul a short distance east of the Manitoba border (Smith 1981:Fig.II-16).

A distinctive pottery called Sandy Lake ware, sometimes associated with mid-17th century European items (Callaghan 1982), occurs on many sites in proximity to the Minnesota border and has been attributed to the Assiniboine (Arthurs 1986:263-264; Dawson 1987:165); a Siouan-speaking people closely related to the Dakota Sioux who were allied with the Cree at the time of French contact. At the Long Sault site on the Rainy River where the Sandy Lake pottery appears to be mainly associated with Selkirk pottery during the late segment of the site occupation reinforces, in this instance, ethnic relationships reflected by specific pottery traditions. Lithic source identifications have supplemented evidence of the relationship suggested by the pottery between the Assiniboine and the Cree. In descending order of abundance the stone materials from the site were quartz, Lake of the Woods rhyolites, flesites, and cherts, Knife River chalcedony from North Dakota, Swan River chert from southern Manitoba, chert from the Hudson Bay Lowlands, and Gunflint Formation taconite from the western end of Lake Superior (Arthurs 1986:206). It is noteworthy that the exotic stone from the site point mainly to the west and southwest with dramatically decreasing importance of northern and eastern stone sources. The preceding is an example how the combined occurrences of pottery traditions and exotic lithics can be mutually supportive to certain interpretations regarding the geographic interrelationships between both related bands and alien peoples.

Evidence of cultural interactions between different people become increasingly complex when the participants occupy different vegetational provinces like the Boreal Forest and the Parklands. Southwestern Manitoba is a case in point. Such cultural complexity was first considered in detail by E. Leigh Syms (1977;1980). His Co-Influence Sphere model recognized the need for a very broad comparative scope in order to evaluate cultural interactions between different groups. Regarding both cultural complexity and its relationship to ethnicity, "During the early Historic period, at least the Western Cree (including Woodland and Plains groups), Western Ojibwa (including Bungi), Ottawa, Gros Ventre, Assiniboin, Teton, Santee, Awaxami Hidatsa, Crow and Mandan, and possibly others, Hidatsa, Omaha and Ponca, Cheyenne and Suhtai may have occupied southern Manitoba to varying degrees ranging from seasonal homeland to seasonal bison procurement to occasional warring and trading expeditions" (Syms 1980:128). While the above cultural amalgam was undoubtedly exacerbated by the European presence to the east the situation likely mirrors, to some degree, the precontact situation. For a graphic representation of cultural complexity in the area based upon pottery see Syms (1976:368).

FIGURE 139: THE SUN FIGURE FROM THE PETERBOROUGH PETROGLYPH SITE This image, engraved into a horizontal limestone bedrock exposure along with more than 300 other discrete images, probably represents the Kitchi Manitou (Great Spirit) or a shaman who acquired power from the Sun. In their classic study of petroglyphs the Vastokas' (Vastokas and Vastokas 1973) tentatively attribute the petroglyphs to Algonkians sometime between the 10th and 15th centuries (Ibid:27). As noted in Chapter 31 on the Maritime Algonkians, however, it is speculated on the grounds of both iconography and manner of execution that the images may be the product of Western Abenakis. On an AD 1680 French map it is recorded that the "Loups", a term commonly used by the French for the Abenaki, and the Iroquois hunted beaver in the general area of the petroglyph site in question. (Reproduced from the Historical Atlas of Canada, Vol.I, (Harris and Matthews 1987:Plate 15; drawing by Mr.David W. Laverie of an image on Plate 14 of Vastokas and Vastokas 1973)



As noted above, the interplay of Plains and Woodland cultures in southwestern Manitoba and elsewhere is complex and still subject to much debate. Even the ethnicity of the Stott burial mound overlooking the Assiniboine River, long regarded as a classic Blackduck complex mound (MacNeish 1954), is now being seriously questioned relative to the multi-cultural nature of the habitation site debris adjacent to the mound (Badertscher et al. 1987:340-349). Indeed, miscegenation of different pottery traditions has even been identified in the area (Syms 1980:136-139). For example, the western-most Selkirk pottery on the Red Deer River and also on the headwaters of the Churchill River to the north, exhibit certain Plains pottery traits like carinated vessel shoulders and lip edge notching (Paquin 1998). Additional Plains-like pottery attributes have been noted, such as incising, S-shaped rim profiles, and quarterly tabs (Lenius and Olinyk 1990:93). Further east at the Lake of the Woods in Ontario, some of the plain, cord malleated vessels also exhibit relationships to Plains pottery styles (Reid and Rajnovich 1980), an observation supported by the frequency of Knife River chalcedony from North Dakota. In northeastern Saskatchewan the 17th to 18th century Pehonan complex pottery, which is related to Selkirk pottery, possesses a number of Plains pottery traits (Meyer 1981; 1983:167). Actual Plains pottery styles were identified at the Goldsworthy site in east-central Saskatchewan (Meyer 1998). It appears that though the region was used by both Woodland and Plains groups during the late 15th to early 16th centuries the Selkirk complex moved into the area in force from Manitoba. A widespread trade network developed that involved dentalium shell from the West Coast, obsidian from Wyoming, and Knife River chalcedony from North Dakota (Burley et al. 1982). Contacts between Plains and Woodland groups, however, appear to have been limited to the margins of the Boreal Forest vegetation province (Meyer and Epp 1990:Fig.4).

In contrast to the complex situation reflected in the pottery miscegenation to the south and west at Southern Indian Lake in northern Manitoba on the lower Churchill River drainage there is virtually no evidence of outside relationships. Some Northern Athapaskan culture, Taltheilei complex materials recovered, however, would have been contemporary with the Northern Algonquian, Selkirk complex occupation (Dixon 1980:149). Evidence of any technological exchanges have not been identified. There is little doubt that as the fingerprinting of stone materials to distant quarry areas increases in both application and sophistication the appreciation of interrelationships suggested by certain pottery distributions will be greatly enhanced.

Human biology:

As most of the territory occupied by Northern Algonquians is characterized by acid soils little in the way of human skeletal material has been available for study. Some information, mainly along the southern fringes of the Shield, however, is available. From the eastern portion of the distribution, for example, it has been observed that the Beothuk were approximately 2 m tall (Tuck 1976:62); an exceptional height for the time which agrees with European descriptions. Skeletal remains from the 14th century occupation of the Juntunen site in northern Michigan at the juncture of the Upper Great Lakes were characterized by dental cavities and abscesses, osteomyelitis and arthritis, as well as some other minor pathologies (McPherron 1967:231). A major salvage excavation at the Lasanen site in northern Michigan in the Straits of Mackinac recovered both primary and secondary burials from a late 17th century cemetery which was attributed to the Odawa (Clute 1971:144). Burials occurred as discrete graves with single or multiple interments and one grave contained six skulls. Seventy-six individuals were involved. Adults were 170 cm (5'6") and 165 cm (5'4") in height for males and females, respectively. In terms of pathologies there was evidence of infections in the form of periostitis, osteoarthritis, mastoiditis, single instances of syphilis and a benign tumour, and fractures, including vertebral compression fractures. Two males exhibited fractures resulting from blows to the head. Dental cavities and abscesses were rare. Cranial morphology was most similar to the Western Basin culture Younge site west of Lake St.Clair (Greenman 1937) and a genetic relationship is suggested. The burial pattern, on the other hand, is most similar to the nearby 14th century Juntunen site. Evidence of skull plaque removal, so characteristic of both the Younge and the Juntunen sites, was absent. Of course, the latter practice, a survival from the Period IV Hopewell Mortuary Complex, could well have been abandoned by the late 17th century. On the other hand, Odawa habitation sites in the Georgian Bay area shared far more cultural traits with their Ontario Iroquois Huron/Tionnotaté neighbours than with Western Basin culture although it is unknown if this also pertained to mortuary practices.

Physical anthropological information is also available regarding skeletal materials from the Blackduck burials mounds of Ontario, Minnesota, and Manitoba (Ossenberg 1974). Her study specifically attempted to evaluate the biological relationship between the different bodies of comparative data using genetically determined cranial discrete morphological traits. A measurement of biological distance between comparative units was used to assess affinities or the lack thereof. Blackduck skeletons from the Rainy River of Ontario and Minnesota were seen as representing "...an alien wedge of Algonquian-speaking people..."(Ibid:38) which compared closely with recent Ojibwa crania. The Blackduck complex skeletal sample from southern Minnesota, however, was quite different from that to the north and was regarded as being ancestral to the Siouian-speaking Dakota. The Manitoba materials exhibited no close relationship to either the Ontario or Minnesota Blackduck cranial samples but, as has been recently suggested, the former may represent a blending of ethnic groups (Badertscher et al. 1987). The general conclusions of the Ossenberg research can readily accommodate current archaeological interpretations. In fact, the physical anthropological evidence simply reinforces a growing awareness regarding the cultural variability in the area and the hazards of using pottery traditions as simplistic ethnic designators.

Inferences on society:

Given the fluid social structure of Northern Algonquians only the most general of ethnic designations will likely be of any utility in discussing relationships between different groups and even here numerous caveats will be the rule. Attempting to archaeologically identify discrete band clusters or, indeed, possible groupings of bands such as the Nipissings and the Abitibis, are also beyond the capabilities of archaeology and the ever changing kaleidoscope of social and political interrelationships of the people (Noble 1982). This conclusion is reinforced by the archaeological evidence pertaining to the distributions and frequencies of pottery traditions and exotic stone materials from sites. Indeed, the archaeological evidence reflects quite well both the early documented descriptions of Northern Algonquian mobility and social fluidity and recent ethnographic studies. Early French documentation regarding the Montagnais, for example, indicate that there were no formal chiefs, only spokesmen with no decision making authority and that the social organization "...was based on lodge-groups of three or four families, of some 15 to 20 people, as the basic socioeconomic units. Several such lodge-groups stayed together or near one another through the winter season in groups averaging about 50 people, and two or more of these aggregates of some 150 to 300 people who..." (Rogers and Leacock 1981:179) would periodically gather together during in the warmer months of the year for trade, ceremonial events, and other functions. The more northerly Northern Algonquians, like the Montagnais-Nascapi and Cree, lacked totemic clans unlike their neighbours to the south like the Ojibwa. Clans or, more accurately, totems as there were no requirements relating to residence, food taboos, or changes with marriage, appear to have been a characteristic of southern social structure. Totemic groups also were exogamous, including band exogamy (Steinbring 1981:249-250). Early documents, however, are extremely vague on the social organization of most groupings of the Northern Algonquians and it has been suggested with justification that the imposition of totemic clans was a response to the disruption of traditional social units by the incursion of European influences and disease (Rogers 1978:763). In contrast, the Potowatami, linked to the Ojibwa and Odawa by oral tradition, appear to have had an inherited corporate clan system (Clifton 1978:729) which could have influenced the social structure of their neighbours during the precontact period. Essential points on which all of the early records appear to agree is that descent was patrilineal and that "...all of these Tribes are nomads, and have no fixed residence, except at certain seasons of the year, when fish are plentiful, and this compels them to remain on the spot" (JR XXXIII:153). It has been cogently observed "...that the prehistoric population was composed of unstructured collectivities of fluid hunting and gathering Algonquian groups with common hunting strategies and high mobility essential for survival in this area of sparse, scattered and seasonally unreliable resources" and that "The geographic and cultural basis for distinct tribal or band identities, a central feature of life in agrarian areas, is not applicable" (Dawson 1987:163 and 164, respectively).

For hunting communities dependant upon natural foods and thus vulnerable to fluctuations in animal availability, particularly certain critically important species like caribou or seal, it was absolutely necessary to have fall-back social relationships based upon mutual support from other communities. Two ways of formalizing such relationships were through marriage and gift exchange, evidence of which can be seen in the archaeological record. For example, pottery manufacture was a female skill and the widespread distribution of different pottery traditions throughout the Shield and their direct association with other different pottery traditions can be most parsimoniously attributed to female mobility related to inter-band marriages (Wright 1965) while the equally far flung distribution of exotic items, particularly stone, more likely relates to gift exchange than simply economically driven trade networks (McCaffrey 1989). The likelihood that such a mutual form of life insurance across the landscape, necessitated by periodic resource failures, has been supported by physical anthropology which indicates that while men tended to be locked into a particular region the women came into a community from a number of different locales. Although pertaining to Period III Middle Maritime culture the evidence of female mobility versus male localism at the Port au Choix site on the west coast of Newfoundland is still relevant to Northern Algonquians. At this site there is clear evidence from both genetically inherited discrete morphological traits (Kennedy 1981) and mitochondrial DNA studies (Jelsma n.d.) that women came into the community from a number of different areas while the equivalent evidence regarding the men indicates that they were of local origin. Such far flung social security networks throw into doubt suggestions of extinctions, such as once was envisioned for the Island of Newfoundland (Tuck and Pastore 1985), and make it more likely that when conditions became untenable people, with the aid of other communities, simply abandoned certain regions (Renouf 1999a). There is little doubt that the exceptional mobility of Northern Algonquians, both on water and across frozen landscapes, complimented such arrangements of mutual support during times of serious privation.

Occasional bizarre occurrences can be detected by archaeological means which likely reflect a social and/or political situation. At the mouth of the Michipicoten River, with the Michipicoten site on the east bank (Wright 1968) and the Nyman site on the west bank (Dawson 1976b), the two contemporary sites produced some striking differences in the respective occurrences of the multiple pottery traditions characteristically found associated in the area.

On the basis of the above evidence one could suggest that the Michipicoten River acted as an east-west boundary between certain groups of Northern Algonquians with nearly half of the Nyman site pottery consisting of pottery traditions with western core areas; namely Blackduck and Selkirk. It has been documented that major rivers frequently acted as boundaries between communities, such as the St.Maurice River demarking the Algonkins to the west from the Montagnais to the east. But occasional

Pottery Traditions	Michipicoten (Strata II-III)		Nyman (Strata II-III)	
	f	%	f	%
Ontario Iroquois	39	18.7	1	3.0
Peninsular Woodland	98	45.9	6	18.2
Western Basin	72	34.4	10	30.3
Blackduck	-	-	15	45.5
Selkirk	-	-	1	3.0
Miscellaneous	2	1.0	-	-
Totals	**209**	**100.0**	**33**	**100.0**

TABLE 29: FREQUENCIES OF POTTERY TRADITIONS AT TWO NEIGHBOURING SITES DURING THE MID-15TH TO MID-17TH CENTURY OCCUPATIONS Despite the fact that the Michipicoten site is located on the east bank of the River at its embouchure into Lake Superior and the Nyman site is only 0.4 km upriver on the opposite bank there are some striking differences in the frequencies of the different pottery traditions at the two contemporary occupations. Most striking are the different frequencies of the Ontario Iroquois and the Blackduck pottery traditions whereas the Western Basin pottery tradition maintains a balance at the two sites and the Peninsular Woodland pottery tradition less so. The small sample from the Nyman site is compensated, to some extent, by the substantial Michipicoten site sample. This is particularly so in that of the more than 100 vessels illustrated from the 1955 and 1956 excavations of the Michipicoten site by Mr. Frank Ridley, not included on the above table, none can be attributed to the Blackduck pottery tradition, a peculiarity noted at the time (Ridley 1961a:136). (Note: Both the Wright and Dawson analyses are based upon vessels and not rim sherds and Western Basin includes the Stamped and Push-Pull categories in Wright and the Macinac and Stamped categories in Dawson).

Ontario Iroquois pottery vessels are found west of the Michipicoten River and a similar occurrence of Blackduck pottery has been found east of the River. Why the exclusion, or near exclusion, of certain pottery traditions at the Michipicoten River from one bank or the other is perplexing. There is a reference in the French literature, which I have been unable to relocate, mentioning that the Montagnais stayed on the east side of the mouth of the Richelieu River and the Algonkins on the west side during a gathering of the two groups as the former stated that they were afraid of Algonkin witchcraft. Of course, such an observation could be anecdotal or refer to a temporary situational issue rather than being evidence for the existence of a physical boundary marker between the two Algonquian groups. For example, what the individuals involved in Montagnais-Algonkin intermarriages would do under the circumstances is unknown. It is apparent that while the geographic distributions of the various pottery traditions do cast light on interrelationships said interrelationships may well reflect local rather than widespread social phenomena. The question still remains. Why is Blackduck pottery present at the Whitefish Island and Juntunen sites in the Sault Ste.Marie area and even further to the east but is absent from the Michipicoten site? In the far north, at Southern Indian Lake in northern Manitoba, there is little evidence of a mixture of different pottery traditions although with the advent of more sophisticated pottery attribute analyses regional variations in Selkirk pottery are being detected which could reflect the products of women coming from different bands. One also has to ask what is the social significance of what appears to be a relatively sharp geographic division between the distributions of the Selkirk and Blackduck pottery traditions in northern Manitoba (Mayer-Oakes 1970) when the two traditions are frequently found together on southern Manitoba and adjacent Ontario sites?

Attempting to reconstruct aspects of social structure from the archaeological record is a frustrating and, in most instances, a fruitless exercise. There are certain phenomena, however, which can, with some degree of probability, be attributed to social organization. The distributions of exotic stone materials and different pottery traditions throughout the enormous territory occupied by the Northern Algonquians, for example, clearly reflects interrelationships between bands; relationships which were capable of moving physical objects, such as siliceous stone, native copper and catlinite, great distances from their geological sources. Similarly, widespread distributions of different pottery traditions presumably reflect female mobility where women would take their different pottery traditions to the homelands of their husbands. Trade or, more likely, gift exchange bonded by blood through marriage were the essential social mechanisms required to establish a formalized pact of mutual assistance as a hedge against the inherent uncertainties of food resource availability (Dawson 1982; Hamilton 1988; Hanna 1984. McCaffrey 1989; Paquin 1998).

Kenneth C.A. Dawson was the first archaeologist to publish the frequencies of different pottery traditions across Ontario and Manitoba (Dawson 1982:Table 1) although, in my opinion, his ten pottery traditions could be reduced to five. These would be as follows: (1) Blackduck. concentrated north of Lake Superior and into the Boundary Waters area between Ontario and Minnesota and thence to southern Manitoba; (2) a generalized Western Basin pottery style which would include Dawson's Macinac, Bois Blanc, Push-pull, and Stamped pottery traditions centred around the juncture of the Upper Great Lakes east into Lake Huron; (3) Selkirk pottery distributed throughout northern Ontario, Manitoba, Saskatchewan, and northeastern Alberta; (4) Peninsular Woodland pottery concentrated around the juncture of the Upper Great Lakes; and (5) Huron-Tionnontaté style pottery from the eastern end of Lake Superior to the Ottawa

Valley and Québec. Despite the fact regarding ethnicity that, "On the basis of the present evidence it appears to be impossible to distinguish between the Odawa, the Nipissings, the southeastern Ojibwa, or the Algonkins of the upper Ottawa Valley" (Wright 1981:58) these distributions and amalgams of different pottery traditions do reflect differing geographical and temporal fluctuations in social and political interrelationships between different communities.

An increasing trend in archaeology to look at the expanded data base in innovative ways and to apply a range of techniques to identify raw materials to distant geological and biological sources will undoubtedly expand appreciation of the interrelationships between various groups through space and time. Far more difficult will be efforts to gain social insights based upon the distribution of cultural debris within single and multiple family dwellings. Precious little has survived of a material culture based primarily upon wood, bark, hides and other perishable substances. Archaeologists, however, have been ingenious in teasing insights from a paucity of material evidence and it is suspected that the future will see increasing efforts to garner further insights into society at a number of different levels.

Limitations in the evidence:

It is somewhat of a paradox that the massive hydroelectric projects, like Baie James in Québec, the Churchill River Diversion in Manitoba, and the Nipawin Project in Saskatchewan, which either destroyed or submerged archaeological sites also have resulted in the most impressive bodies of archaeological data. Unfortunately, many of the major hydroelectric projects from Newfoundland to Ontario were established prior to the enactment of provincial legislation to mitigate their impact upon heritage resources such as archaeology. Even where legislation exists there is frequently insufficient time allowed for archaeologists to do their job properly. Such was the case with one dam on La Grande Rivière of the Baie James Project which put 2,500 square kilometres of land underwater. In addition to habitation sites and special purposes sites, like quarries, many rock art sites have been submerged by the waters backed up by dams (Tassé et Dewdney 1977:8-15, 81). Ice rafting, spring flooding and erosion in combination with the dams, logging, and looting have seriously reduced the archaeological record (Julig 1988; Thomson 1983). Beyond their obvious construction and submergence damage to archaeological sites hydroelectric projects have exposed shorelines to massive erosion. Such an example is Lac St.Jean where but for the timely efforts of J.-.H.Fortin, an amateur archaeologist, much of the archaeological evidence would have been totally lost (Moreau et al.1991).

Endemic forest fires, which incinerate the forest floor organic covering and collapse the thin archaeological deposits into a single, hopelessly mixed amalgam of archaeological debris, further exacerbated by frost action and bioturbation greatly complicate the archaeologist's task of attempting to isolate components. Both the nature of the archaeological sites and the cultural debris reflect the following: "The nomadic lifestyle of the original inhabitants has resulted in small, scattered archaeological sites. These sites have frequently be subjected to destruction by water inundation, dense forest invasion and acidic soils; consequently they yield comparatively sparse recoveries. They tend also to be concentrated in ecologically favourable locales, with the result that they have superpositional deposits, often of an equivocal nature. Often hundreds of years of human activity are compacted into a depth of only a few centimetres. Further, the inhospitable and often inaccessible terrain of the interior forest has not, until recently, been attractive to archaeological investigators" (Dawson 1983:55).

As has been noted elsewhere, there has been a tendency for archaeologists to place too great a faith in the precision of their radiocarbon sample contexts and to simply accept the dates at face value. This has been done despite the acknowledged treacherous nature of archaeological contexts and the ever present danger of contamination of charcoal in the Boreal Forest (Meyer and Russell 1987:22; Rajnovich 1983). For example, a misplaced faith in the precision of radiocarbon dates has led to the proposition that the Blackduck complex and Late Western Shield culture (Laurel) were contemporaries (Lenius and Olinyk 1990:82-83) despite the contradictory physical evidence from both stratigraphy and isostatic rebound strandline site isolation as well as the cultural evidence of a technological transition from Laurel into Blackduck. This chronic problem with radiocarbon sample contexts throughout the Canadian Shield was also considered in Volume III (Wright 1999:733).

It has been a complex and controversial task to attempt to relate archaeological cultural constructs to historically documented "tribes". These so-called "tribes" actually represent imposed conglomerations of numerous, independent small bands where the application of the Direct Historical Approach is not nearly so successful, in any specific sense, as it is with horticultural communities. There have also be difficulties accommodating the often conflicting views of ethnohistory, linguistics, physical anthropology, and archaeology (Syms 1982). Undoubtedly there has been an underestimation of the impact of European influence and diseases on Northern Algonquian peoples over nearly 500 years of contact and, in this respect, archaeology must play the 'Devil's Advocate' role in challenging the simplistic linking of certain ethnological reconstructions to any pre-European state of affairs. Archaeologists, however, have often been guilty of using an "index fossil" approach to designate a cultural construct with most of the "fossils" being projectile point types established for more southerly cultural constructs. In this regard, there has been a tendency to look outside of the Northern Algonquian homeland for relationships rather than considering the totality of Northern Algonquian culture when drawing comparisons. For example, many archaeologists in Québec working in the Shield have myopically focussed on the archaeological evidence from Labrador while assiduously avoiding other bodies of comparative data.

Regarding the limited degree of archaeological visibility of major activities on sites one of the best examples can be drawn from William Cabot's AD 1906 description of an Innu (Montagnais) caribou hunt camp (Loring 1997) in the interior of Labrador. With the passage of time and the dissolving of the bone remains by the acid soils little would survive except the flimsy remains of the dwellings. Of course, the caribou drive lanes, constructed mainly from trees and brush, would have disappeared long ago.

Despite the foregoing limitations major strides have been made in elucidating the pre-European occupation of the lands of the Northern Algonquians. It is a rich history and fully deserves serious archaeological attention. Certainly it is a history which is particularly valuable as a comparative body of information to be applied to the wider study of the lifeways of hunting peoples throughout the northern hemispheres of the world. We have come a long way from the day when I was a graduate student and was advised by a eminent scholar to not bother looking for pottery in the Shield as it would not be present due the danger of pot breakage in such a stony place.

EPILOGUE TO VOL.III, PART 1 AND PROLOGUE TO VOL.III, PART 2

The horticultural revolution which dramatically altered every aspect of life for the St.Lawrence Iroquois, the Ontario Iroquois, and the Glen Meyer/Western Basin cultures has taken up the bulk of the content of Volume III, Part 1. With the introduction of horticulture momentous cultural change took place, slowly at first and then rapidly. This was only after an apparently early and lengthy experimentation with cultigens, particularly squash and sunflower. When corn and then beans were added to the dimension there was also a slow start with the earliest corn dating to AD 500. In only three to four hundred years, however, palisaded villages housing multifamily dwellings constitute substantive evidence of the dramatic and pervasive influence of an intense horticulturally based economy. This development transformed a transitory way of life into a sedentary one requiring permanent residence in order for women work groups to plant, tend, and harvest the crop. Once started change was exponential. Villages became both progressively larger and geographically grouped into increasingly larger clusters of related villages. Technology changed with pottery vessels dominating the archaeological assemblage and implements like corn grinding manos and metates becoming common. There are clear technological continuities, however, with the preceding Point Peninsula complex of Period IV. Ossuary burial appears in and around the villages but with obvious ancestral roots in earlier mortuary practices. By far the most dramatic change was in the area of settlement patterns, both at the village level and in the manner in which people distributed themselves across the landscape. Earlier fishing camps were still used but the obvious focus of subsistence was on horticultural products. Evidence of dramatic changes in settlement patterns, of course, was directly keyed to the transformation from an economy based on hunting and gathering to an economy based upon horticultural products. In short, it was subsistence based. Social change was dramatic and undoubtedly related to women becoming the major food producers thus taking over an economic role traditionally held by men. With the sedentary and cooperative female work-group requirements of horticulture came multiple family longhouses occupied by matrilineages with descent traced through the female blood line replacing a presumed earlier pattern of descent following the male blood line. Social change appears to have taken place with the same rapidity which characterized the settlement pattern changes. Such fundamental and sudden changes highlight the flexibility of cultures to react to major innovations like horticulture. This applies as much to the Iroquoian and adjacent Algonquian peoples response to the Agricultural Revolution as it does to recent responses to the Industrial Revolution or the current Electronic Communication Revolution. In all cases it involved a speed of cultural transformation which could leave an earlier generation shaking it's head at the alien interests of their children and grandchildren and fearful of the disruptive elements associated with rapid cultural change. No doubt early hunters watched with concern as women became increasingly the economic power in their society and nostalgically reminisced on the "Good Old Days" when fishing and hunting concerns prevailed.

While the impact of the horticultural revolution is best reflected in the culture history of the Ontario Iroquois it would appear that the initial introduction of horticulture came from the west and is particularly apparent in the Princess Point-Glen Meyer cultural sequence. In contrast, evidence of a major commitment to horticulture by the Western Basin complex is limited. It may be speculated that the rich natural foods available in the region around Lake St.Clair helped to retain the early transitory settlement pattern based on wild foods. On the other hand, this could be a false impression if the Western Basin people air dried their corn for flour production leaving little archaeological trace unlike the parching process and its associated accidental charring of corn which appears to have been prevalent among the Ontario Iroquois as well as the Glen Meyer complex. There is much contemplation needed in this area in order to come to grips with the relationship between what is readily observable in the archaeological record and what is archaeologically invisible put possibly discernible through other lines of inquiry such as stable isotope studies.

In terms of the Maritime Algonquian and Northern Algonquian cultures the way of life continued from what had prevailed in Period IV. Unlike Maritime Algonquian culture, Northern Algonquian culture during Period V, or in some instances slightly earlier, expanded onto the Island of Newfoundland in the east and through northern Saskatchewan into Alberta in the west as well as spread into the more northerly sectors of Québec and Ontario.

In the process of writing Volume III it became clear as I advanced into the Plains that it was impossible to accomplish the task in a single volume and thus Volume III has been divided into two parts. Some may query why I did not simply add a fourth volume to the series. As Volume III involves an arbitrary time period from AD 500 to European Contact it was decided that two volumes identified as Parts 1 and 2 best accommodated the temporal continuity followed in the work. In short, separate eastern and western volumes, with their particular geographical foci, would be less disruptive to the reference function of the volumes. As it stands, Part 1 pertains predominantly to eastern Canada and the southern Subarctic whereas Part 2 will consider the Plains, the Plateau, the West Coast, the northwestern Subarctic, the Arctic and related population expansions. Just as the case with Vol.III, Part 1, where the horticultural revolution required the most space, in Vol.III, Part 2, the Late Palaeo-Eskimo distribution from the western Arctic to

Newfoundland and Greenland and its eventual demise and replacement by the Inuit beginning in the 10th century will require equivalent space. The other western cultural developments, with a some qualifications, basically reflect an essential continuity with their ancestral roots in Period IV.

Some readers, hopefully few, may be concerned that a more theoretical approach has not been taken throughout these volumes. This was purposeful. The goal of the volumes is to serve as general reference works treating the culture history of the pre-European native people of Canada as revealed by archaeology. It may have been noted, however, that occasional evaluations and criticisms of the prognostications of some archaeological theorists have been made. It is certainly not that I am anti-theory; quite to the contrary. Theory building is an *idealistic* goal in the development of many disciplines although it must be observed that those theorists attempting to structure the products of human culture have a far more amorphous and unmanageable subject matter to deal with than those working with the products of genes (biology) or inanimate processes (geology, physics, etc.). I adhere to a traditional definition of a theory as "an assumption based upon principles *independent* of the phenomena under investigation". An example would be the law of superposition, originally derived from geological evidence but equally applicable to archaeological stratification of cultural deposits. I also hold to the procedure whereby patterns and phenomena are abstracted from the empirical evidence in order to test hypotheses, including alternative hypotheses, and finally the determination if any of the hypotheses have potential theoretical utility. Based upon the preceding criteria, there appears to be relatively little stemming from archaeological evidence which can truly be called theory. Some archaeological theorists will undoubtedly suggest that the problem rests with my restrictive definition of what constitutes a theory but I would respond that without a precise definition theoretical prognostications become matters of personal intellectual whimsy and thus negate meaningful communication. Documentary historians appear to have, for all intents and purposes, discarded efforts to construct theories of human history on the grounds that the subject matter is simply too complex to establish criteria suitable for objective theory formulation. In this regard, I would agree with R. G. Collingwood that a historian's primary business is to the best of his/her ability to construct truthful narratives (Collingwood 1994:341). As used here, of course, historians include both archaeological and documentary historians.

The foregoing heresy is not intended to reflect on archaeological scholarship but rather to recognize the extreme complexity of archaeological evidence with its innumerable unknown and unknowable elements. For some the preceding opinions may appear to be unduly pessimistic. I do not, however, see them as detracting from archaeology's contribution to knowledge, to other disciplines, and to the public. My criticism of archaeological theory is not necessarily a blanket criticism. There are a number of scholars who have addressed the formidable problems facing archaeological interpretation and have attempted to harmonize the paradigms inherent in the scientific method and symbolic (semiotic) approaches. For example, "Thus, banal as it may seem, the idea gradually dawns that the truly interesting questions, raised by any interpretative approach, are about the mechanisms and the foundations of the arguments linking the empirical base to the speculative superstructure of each hypothesis, conclusion, theory, model, etc." (Gardin and Peebles 1992:4). For a detailed consideration of the philosophical bases of archaeological reconstructions and a number of related issues see, in particular, the Introduction and Epilogue of the aforementioned publication. While dubious of the ability of archaeology to independently generate substantive theories I do hold that developing testable hypotheses from the evidence represents a fundamental procedure in any attempt to understand past human behaviour.

A serious weakness of much archaeological theoretical deliberation is that there is no agreement on what constitutes a theory and, therefore, people naturally tend to talk past one another. Indeed, what is often referred to as theory is actually a narrow methodological consideration better described as an untested hypothesis or simply a procedural preference on the part of the author. Such an unsystematic approach whereby anyone can do their own thing by simply altering the traditional definitions of words such as theory may help to explain the all too common obscure, jargon-laden language employed. The latter more closely mirrors 'chanting' to a secret society than any attempt at meaningful communication. Unlike other disciplines where there is essential agreement on the definitions of words like theory and hypothesis, the lack of consistency in archaeological definition of something as basic as the meaning of theory must be regarded as an unacceptable weakness. The failure or even interest in achieving some common agreement on the meaning of terms has resulted in multiple uses of the word 'theory' which leaves one with a sense that some form of intellectual chaos has been permitted free reign. Thus theory can be anything from a methodological approach (Johnson 1999), a constraining interpretative preference, or any intellectual formulae of personal inclination with the fundamental hypothesis testing stage in the process of theory evaluation often being ignored. What I regard as flawed logic is accepted by others as the norm. For example, "As all readers of this book know by now, the word "theory" means different things to different authors in this volume" and "To many others, theory seems to be any set of abstractions people wish to use at any one time to learn" (Leonard 2001:93). Further, "A theory is an explanation which has stood the test of time and substantiation. There are many levels of theory, ranging from the general to the exceedingly specific. Specific theories are subsumed under superstructures of increasingly general and, frequently, increasingly simple theories. Superimposed above general theories are the even more general assumptions, which behave as premises from which theories can be derived following research and verification." (Epp 1983:173). The adherents to such amorphous use of the word 'theory' should , right at the beginning, precisely define what they mean by the word. Indeed, it is now suggested that "It has become possible to exist in archaeology largely as a theory specialist, and many advertised jobs now refer to theory teaching and research" (Hodder 2001:1). In my unquestionably biased opinion mandatory courses in the history of philosophical thought would be more to the point!

The situation with much of current archaeological theory reminds me of a conversation between Alice and Humpty Dumpty in Lewis Carroll's "Through the Looking-Glass and What Alice Found There" (1872). "When I use a word,' Humpty Dumpty said, in rather a scornful tone, 'it means just what I choose it to mean - neither more nor less.' 'The question is,' said Alice, 'whether you can make words mean so many different things.' 'The question is,' said Humpty Dumpty, ' which is to be master - that's all.'

A Devil's Advocate could propose a Humpty Dumpty Archaeological Theory. As Humpty Dumpty stated, the issue is "which is to be master" when, for example, it comes to the use of words. If traditional definitions of words like 'theory' or 'hypothesis' do not suite you, simply change them but never provide the reader with your new definitions. A Humpty Dumpty Archaeological Theory would simply recognize the obvious levels of chaos residing in the unknowns and the unknowables of archaeological data. Of course, everyone knows what happened to Humpty Dumpty and as with the past *totality* of what once was which archaeologists attempt to address 'All of the King's horses and all the King's men could not put Humpty Dumpty together again'. As the reader can gather by now, I have little sympathy with the verbiage which all too often obfuscates the nature of the concepts being addressed. I characterize such pretentious mouth-talk as 'liplabour', a delightful old word from forgotten English which means action of the lips without concurrence of the mind (Richard Coxe's *Pronouncing Dictionary 1813*).

I am not alone in my cynicism regarding much of what has been perpetuated as archaeological theory. For example, " Today, significant segments of the archaeological community lurch from intellectual fad to scholarly fancy, with hardly a pause for reflection or evaluation. In less than a generation the "Old" archaeology has given away to the "New". Culture history has become an epithet for outmoded methods and has been replaced by processual archaeology. Processual archaeology in turn is yielding to postprocessual, structural, deconstructural, and other up-to-the-minute schemes. A mid the stratified ruins of earlier archaeologies lie the corpses of history and humankind" (Peebles 1992:20). Confirmation of the foregoing chaotic state of affairs is the definition of a basic archaeological method called culture history (cultural-historical approach) being "An approach to archaeological data that orders structures and artefacts into a basic sequence of events in time and space, usually as a generalized description of human achievement under broad period-based headings. Widely regarded as a rather traditional approach to archaeological investigation, the culture history view has been criticized by processual archaeologists and post-processualist archaeologists for the fact that explanations in terms of migration or invasion are not explanations or understandings at all but merely descriptions of events. Nevertheless, the development of a robust culture history remains the object of some archaeological work, especially the geographical and chronological mapping of cultures and cultural influences" (Darvill 2002:109-110). Note the use of the word "some" and an imposed limitation of the role of culture history to geographical and chronological considerations. It is unacceptable to hamper archaeological interpretation by slicing up a continuum of logic into convenient 'digestible' bits of little pragmatic use to the central goal of the discipline. Any orientation or method which contributes to a further understanding of past human behaviour is fair grist for the mill. Intellectually blinkered views only inhibit the process of knowledge acquisition. As the volumes of *A History of the Native People of Canada* are unapologetically focussed on culture history some comment was deemed necessary regarding this recent trend for people to change definitions and then criticize original definitions for not abiding by a particularistic point of view. This introduces a serious element of chaos into archaeological communication. For example, no one told me when I was going through university that culture history was only description devoid of explanation and consideration of cultural process. In fact, cultural process was a key element of the method. I suspect that everyone knew that such aspects of archaeological inquiry were integral elements of culture history and they were not, therefore, issues of debate.

I apologize to the reader for the foregoing professional rant. I have, however, watched with increasing dismay the increase in theorisers who apparently view their personal ideologies as being paramount to the data. Archaeological waters are sufficiently muddied without a further stirring by bottom grubbing ideologies divorced from the evidence. It may be old fashioned but I still adhere to an ideal process which involves the abstraction of patterns and phenomena from substantive evidence in order to test their applicability to various interpretational considerations. Human culture has complicated this process enormously which may explain why there are, in my opinion, no convincing archaeological theories in the discipline, at least as far as my definition of a theory goes.

An important area of study which has been largely ignored in this Volume is native oral tradition and its relationship to archaeological history. The two are interrelated.

However, the relationship between native oral history and archaeological history is a complex matter with both detractors and supporters. In his abstract of an article which seriously addresses the issue Ronald J. Mason stated, "Archaeologists today are being urged from within and outside their profession to incorporate aboriginal oral traditions in reconstructing culture histories. Such challenges usually ignore or at least drastically underestimate the difficulties in doing so. Not least among those difficulties is that of attempting to reconcile inherently and profoundly different ways of conceptualizing the past without violating the integrity of one or the other or both. The pro and con arguments are examined theoretically and as actually employed in discrete instances. These raise such problems of incommensurability as to severely limit the fruitfulness and even desirability of making the attempt" (Mason 2000). I have certain quibbles with some of the positions taken in this otherwise cogent article. First, I would suggest that we have a very incomplete appreciation of the time depth and complexity of native oral traditions and the extent of confused communication between people who speak in metaphorical terms versus those with a legalistic and literal adherence to the written word. Some appreciation of this intellectual schism is critical to meaningful negotiations between native advocates and the legal system. Second, different native cultures attached different value to the degree of importance of precisely communicating the past to succeeding generations. A major stumbling block in the way of native-white communication regarding the former's use of metaphor and the latter's adherence to literal interpretation of words has undoubtedly been a major impediment to resolving disputes. For example, during the Bullfrogs case with the Ojibwa the latter stated that "...they could not speak as they should because their hands were empty" (Williams 1996:33). The presiding judge interpreted the statement to mean that they were impoverished whereas what was meant by the Ojibwa spokesmen was that they did not have a wampum belt to support their claim. With reference to the legal system it has been astutely noted that "...basing a case on oral tradition alone is legal suicide, and ignoring oral tradition is also suicide" (Ibid:32). This wall of culturally imposed non-communication appears to be gradually breaking down although there is a long way to go and undoubtedly cultural misunderstandings will impede problem resolving legislation for many years to come. It is, however, high time that the cultural impasse was addressed, given that more than three and a half centuries ago the Jesuit Jean de Brébeuf in referring to Huron discourse observed that "Metaphor is largely in use among these Peoples; unless you accustom yourself to it, you will understand nothing in their councils, where they speak almost entirely in metaphors" (JR X:219). Third, an example of how native oral tradition and archaeological evidence can unite to assist in resolving disputes is the Mohawk land claim regarding the Upper St.Lawrence Valley. The law and most archaeologists have simply accepted the statement that the Mohawk developed in the Mohawk Valley of New York and this is true. What has been overlooked is the fact that today's Mohawks are a genetic and cultural amalgamation of a number of different tribes. This miscegenation came into full force with the destruction of the Huron Confederacy by the League of the Iroquois in the mid-17th century along with other neighbouring Iroquoian confederacies. Many Huron were adopted by the Mohawk including the entire Arendahronon tribe. Stepping back to the mid 16th century there is archaeological evidence that the southern tribes, who eventually joined the Huron Confederacy, destroyed the western St.Lawrence Iroquois in extreme eastern Ontario and adjacent Québec. Many captives, mainly women and children, were adopted by the conquerors. As much as 30% of the pottery from contemporary Huron villages is represented by the distinctive St.Lawrence Iroquoian decorative styles. It is suggested here that the large numbers of St.Lawrence Iroquois adopted by the southern Huron tribes and, in particular, the easternmost of these tribes, the Arendahronon, retained their oral tradition which placed their homeland in the upper St.Lawrence River Valley and that this oral tradition was incorporated in the corpus of Huron oral traditions. When Huron captives flooded the Mohawk villages and, in particular, when the entire Arendahronon tribe joined the Mohawk the St.Lawrence Iroquois oral tradition of a homeland in the St.Lawrence Valley became incorporated into the corpus of Mohawk oral traditions. This archaeological scenario is also supported by linguistic evidence. The central point being made here is that it is simplistic to regard present native populations as being the end result of any single lineal and genetically pure lineage regardless of tribal name. Archaeological and documentary evidence pertaining to the mid 16th century, the mid 17th century, and the latter portion of the aforementioned century, and the Mohawk oral tradition of a claim on the upper St.Lawrence Valley cannot be assessed independent of one another. This situation coincides with the well documented practice of Iroquoian people adopting their conquered enemies, mainly women and children, in order to recoup war losses. The life of a woman was more valued in Iroquoian society than that of a man as it was the women who "populated the land". The preceding example reflects the complexities encountered when attempting to accommodate oral traditions and archaeological evidence although in this instance the two approaches can be viewed as being complementary. I would hold that if all people keep their minds open and focus on principles rather than anecdotal peripheral flotsam considerable progress is likely, even in those areas which appear to defy resolution. But all lines of evidence must be addressed, including archaeological and oral tradition. In land claims issues the courts have tended to rely too heavily on documented records. A broader intellectual net is required to resolve such complex and politically difficult issues.

Throughout these volumes it has been emphasized that archaeological history is an inseparable partner with documentary history with both aspects representing elements of a single discipline dedicated to the greater understanding of past human history despite quite different methodological approaches. It is for this reason that the word 'prehistory' has been eschewed. In a review of Volume I, however, the title of the work was criticized on the grounds that it was not native history which was being discussed but prehistory. It is deemed appropriate, therefore, to end this section with a reassertion of the broader definition of what constitutes the body of a discipline concerned with the human past. This dichotomy of history into documentary history versus prehistory is, in the main, unique to North America and in large part would have stemmed from the cultural discontinuity between indigenous native and immigrant Europeans. No such situation exists in Europe, for example, and other regions settled by newcomers appear to have been able to integrate archaeology and documents without establishing a dichotomy (e.g. Green 2000). What has been called 'holistic archaeology' has clearly advocated the merger of archaeological and documentary history and is "...open to using non-archaeological forms of data to study the past" (Trigger 1991:563). Of course, Bruce Trigger has been arguing for this course of action for nearly 40 years (e.g. Trigger 1966). There are heartening signs, however, that the message is finally getting through. For example, it has been proposed that 'contextual archaeology' (Hodder 1986) involves the fuller integration of archaeological interpretations with other fields such as physical anthropology, linguistics, ethnography, native oral tradition, and early documentation. A more long-winded but accurate term for this amalgamation has been the 'anthropology of long-term history' (Green 2000). Particularly promising has been an entire volume of papers dedicated to 'The Entangled Past: Integrating History and Archaeology' (Bond et al. 2000) although regrettably many of the papers did not really address the symposium focus. In a real sense the statement "American archaeology is anthropology or it is nothing" (Willey and Phillips 1956:2) could be more precisely paraphrased as "Archaeology is multi-disciplinary or it is nothing" with the caveat that archaeology fall under the broad intellectual blanket of history. The foregoing points, archaeology as history and the requirement that archaeology have a multi-disciplinary orientation, are not really new but need to be re-emphasized. There is still a hangover from the simplistic philosophy of logical positivism which has blurred the goals and capabilities of archaeology and has reinforced another false dichotomy - that between the sciences and the humanities.

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GLOSSARY

While an effort has been made to define unfamiliar words or concepts in the text such definitions are often limited to a particular chapter therefore the following listing was deemed necessary. Only those words and concepts deemed particularly pertinent to Vol.III, Part 1 will be repeated from Volumes I and II.

Agricultural Revolution - This phrase refers to the dramatic cultural changes which took place as a result of the adoption of horticulture (corn, beans, squash, sunflower, tobacco) and its imposition of sedentary settlement upon former transitory hunters and gatherers.

analog - as used in archaeology, a functional correspondence.

animism - the attribution of a living soul or spirit to inanimate objects and natural phenomenon, such as stone and wind, as well as animate objects, such as animals and plants. Humans were also part of this widespread cosmological belief.

Awasco/Awascoid - a 10th to 11th century horticultural archaeological complex in New York State which eventually gave rise to the New York Iroquois tribes.

Appalachian system - an ancient, much eroded mountain range which extends from the southeastern United States in a northeasterly direction into eastern Québec, the Maritime provinces, and Newfoundland.

bast - the inner lining of bark whose fibrous nature makes it ideal for twisting into the cordage used in the production of fabrics and numerous other products ranging from hats to harpoon lines.

bilateral femoral torsion - a condition where the upper legs are bilaterally distorted.

bioturbation - anything of a biological nature which disturbs the soil such as earth worms, insects, tree falls, and human activities.

braided cordage - plaited or interwoven plant fabric and/or animal hair; in this instance to produce cordage for lashing objects together, making fishing lines, and snares.

cannon bone - the lower foreleg (tibia), usually of deer, which due to the density of the bone was frequently used for the manufacture of tools such as beamers, awls, and arrowheads.

chalcedony - a high quality silica group of minerals frequently selected because of its chipping qualities and colouration for manufacturing stone tools.

confederacies - an alliance between two or more tribes or even a union of different cultures, such as the northern Neutral, Tionnontaté, and the Odawa confederacy acting against the Fire Nation confederacy. Generally confederacies were mutual non-aggression pacts but where tribal interests coincided some confederacies were capable of major conquests of neighbouring people.

Couture complex - a poorly understood archaeological complex in southwestern Southern Ontario and adjacent Michigan and Ohio which has been dated to around AD 500.

cribra orbitalia - a probable iron-deficiency condition identified in a skeletal population by porous lesions on the roof of the eye socket.

daub - a mud exterior coating of a dwelling which survives archaeological when exposed to fire as small fragments, many of which retain impressions of the wooden lattice work they were impressed into.

dead-fall - a condition where a tree falls over and tears out a mass of the soil matrix it was rooted in. Such bioturbation can invert or destroy stratigraphy on sites.

dehiscence of the tympanic plate - a defect in the tympanic plate of the skull due to problems involving ossification.

fictive - a kinship relationship which is not based on blood but other relationships such as clans.

finger-printing - identifying a particular stone from a known geological source to an archaeological specimen based upon chemical and/or petrographic analyses.

fissile - of a nature whereby interior and/or exterior surfaces slough off; common to the poorly prepared clays and firing of Algonquian pottery.

flotation - a method of separating small particles of carbonised materials from excavated archaeological soils by floating objects out of the soil and screening the residue off the water surface. All microscopic plant remains and most macroscopic materials are recovered by this method. There are a number of variations on this method dependent upon soil conditions, the availability of water, and inclination.

gill net - a net whose mesh is designed to catch in the gills of fish; the use of the gill net can be inferred both from the presence of stone netsinkers but also from the evidence that all of the fish are approximately of the same size - a factor controlled by the mesh dimensions.

Glen Meyer complex - a 11th to late 13th century horticultural complex situated west of the Niagara Escarpment. Originally believed to be a western expression of the Ontario Iroquois tradition it is now regarded as being more closely related to the Western Basin complex and therefore of an Algonquian ethnic authorship rather than Iroquoian.

horticulture - a word which generally pertains to garden cultivation whereas agriculture includes the raising of animals as well as working the soil.

in situ - literally 'in place' which is generally applied in archaeology to cultures who developed in place rather than being recent migrants to an area.

iron pyrites - a widespread sulphide mineral used by stone age people as part of a fire making kit whereby the pyrite nodule is struck with a chert striker to produce a spark.

linear stamping - a common pottery decorative technique of impressing a generally straight edge implement into the wet clay to produce a range of linear motifs.

Manitou - a general name for spirits which can be qualified as to importance such as the Gichi or Kitchi Manitou; the Great Spirit.

mano - a handheld disc-shaped stone used to grind kernels into flour on a metate or to crack nuts and act as an support for stone and bone manufacturing processes.

Middleport - a term which can be applied to a specific site on the Grand River or to a stage dated between 14th and early 16th century when major changes took place in the Ontario Iroquois tradition.

mitochondrial DNA - pertains to genetic traits which can only be provided by the female line. Useful in tracing female-male sedentary versus mobility characteristic of the two sexes and in determining the wild origins of some plants which were eventually domesticated.

moiety - a social arrangement whereby one grouping of clans buries the deceased of another grouping of clans and attempts to comfort the mourners; the essential function of moieties is ceremonial.

mortar/metate - a stone in which plant material is reduced to flour; they can range from portable fashioned circular slabs of rock to enormous glacial erratics. Their use is generally indicated by a dish-shaped depression on one or both sides.

neutron activation - a process used to make a substance radioactive in order to measure, using a spectrometer, chemical ratios; used mainly in finger-printing stone materials from known geological sources to archaeological specimens. Such a procedure, in conjunction with petrographic microscopic examination of thin sections of stone, can reveal that some substance had been traded for thousands of kilometres from their geological sources.

Oak Hill-Chance horizon - an archaeological complex involving a horizon style of pottery attributes dating from the 14th to early 16th centuries which in New York state gave rise to the Mohawk, Oneida, and Onondaga although many adjacent groups like the St.Lawrence Iroquois and eastern Algonquians shared in the same pottery tradition.

osteomyelitus - an inflammation of the marrow cavity of human longbones, particularly the lower limb.

ossuary - a communal burial pit containing the remains of mainly secondary burials brought as bundles from the cemetery; a communal burial pit containing the articulated remains of a number of individuals would not qualify as an ossuary as used in this work.

osteitis - inflammation of the bone in humans.

periostitis - inflammationa of the periosteum, a thin layer of tissue which envelops bones.

petrographic analysis - generally applied to stone but sometime bone and other substances, petrographic analysis involves, in the case of stone, cutting thin sections of stone which are then examined under a petrographic microscope in order to see the structural characteristics of the stone and how the specimens from archaeological sites match specimens from geologically known sources.

phytoliths - are minute mineral particles which form inside of plants; being recoverable from archaeological deposits as well as diagnostic of certain plants phytolith studies can contribute to reconstructions of earlier environments and identify the presence of particularly important plant species like cultigens.

Pickering complex - an 9th to 13th century archaeological complex east of the Niagara Escarpment which represents the earliest evidence of the Ontario Iroquois tradition.

pièces esquillés or wedges - a common chipped stone tool, frequently mistaken as debitage, which in terms of manufacture falls somewhere in between the utilized flake and the finely chipped stone tool; in terms of function these tools appear to have functioned mainly as burins and often have multiple burin blows which remove a lateral edge of the tool in order to produce a sharp, right-angled burin cutting edge.

Princess Point complex - a 6th to 11th century early archaeological complex west of the Niagara River which has produced the earliest evidence of corn at AD 500.

rhyolite - a fine-grained, glassy volcanic rock frequently used in the manufacture of stone tools, particularly in eastern Canada.

seriation - a method of arranging bodies of comparable data into a series of temporal relationships by applying the method to a contact period site and then extending back in time to precontact sites one is able to trace a line of relationship which can extend hundreds and even thousands of years back into the past and presumably represents the ancestral development of the people represented by the contact site.

Southern and Northern Division Huron sites - the tribes constituting the five Huron tribes in the early 16th century were distributed in two major clusters, one in Huronia proper and the other distributed along the north shore of Lake Ontario; in the late 16th century the southern tribes shifted northward to eventually join the tribes in Huronia proper and also establish the Tionnontaté on Georgian Bay.

stimulus diffusion - Unlike direct diffusion, where a technology is passed on in its entirety to another group, like the gun or horse culture, stimulus diffusion involves the transfer of technology and other aspects of culture from one group to another but with the latter modifying the cultural transfer to such an extent that the end product bears little relationship to the product of the original donor. An example would be the soapstone vessels of eastern North America which led initially to similar pottery prototypes but rapidly developed into a wide range of shapes and other attributes which bore no resemblance to the original soapstone vessels with lug handles.

strike-a-light - see pyrites.

twined fabric - a woven fabric, generally of plant materials but sometime with the addition of animal fur, consisting of vertical elements around which horizontal elements are interwoven; the are many variations in the technique; twined fabric is generally associated with bags, shrouds, cloaks, and, on some occasions, hats.

unifacial - refers to any tool which is only flaked on one face, usually the dorsal face.

Woodland - An archaeological classificatory unit based on the presence of pottery. While the appearance of pottery represents a device for separating the Archaic period from later developments was simply a technological advance which, in its earliest stages has nothing to do with the introduction of cultigens, burial mounds, or any other major cultural innovations - it functions as a simple and convenient device to control the time column.

X-ray flourescence - a technique involving the exposure of an archaeological specimen to X-ray emissions in order to observe structural characteristics but in particular to identify the chemical constituents of the object in order to finger-print it to a particular geological deposit and thus cast light on trade interrelationships and other aspects of human mobility.

A HISTORY
OF THE NATIVE PEOPLE OF CANADA

VOLUME III, PART I (A.D. 500 – European Contact)

J. V. WRIGHT

This is Part 1 of the third and final volume of *A History of the Native People of Canada*, as revealed by archaeological evidence. Over 12,000 years of Native history preceded the arrival of Europeans. Due to a markedly increased body of information Volume III had to be divided into two parts, which appear as separate books.

Part 1 treats eastern Canada and the southern Subarctic regions of the Prairie provinces. It examines the association of archaeological sites with the Native peoples recorded in European documents and, in particular, the agricultural revolution (pertaining mainly to the Iroquoian people of the Lower Great Lakes and Upper St. Lawrence River). Cultural developments in other areas of the east and the Canadian Shield essentially retained earlier cultural practices.

It is hoped that these volumes will contribute to an appreciation of Native history prior to the devastating events initiated by the European occupation of Canada. It is further hoped that, with the amalgamation of archaeologically based and documentary based human history, the impressive cultural heritage of the original occupants of this land will receive the respect and attention it richly deserves.

ABOUT THE AUTHOR

James V. Wright joined the National Museum of Canada in 1960. Throughout his career, he was influential in the training, encouragement and support of young archaeologists. He also published many books and articles for general and scholarly audiences. In 1991, he retired and was made a Curator Emeritus with the Canadian Museum of Civilization. Dr. Wright received his university training at McMaster University, the University of Toronto, and the University of Wisconsin at Madison.

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